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REPORT OF THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT*

(Rio de Janeiro, 3-14 June 1992)

* The present document is a preliminary version of the report of the United Nations Conference on Environment and Development and is being issued in five volumes. The Rio Declaration on Environment and Development and section I (Social and economic dimensions) of Agenda 21 are in volume I; section II (Conservation and management of resources for development) of Agenda 21 is in volume II; and sections III (Strengthening the role of major groups) and IV (Means of implementation) of Agenda 21 and the non-legally binding authoritative statement of principles for a global consensus on the management, conservation and sustainable development of all types of forests are in volume III. The proceedings of the Conference and opening and closing statements are in volume IV. Statements made during the Summit Segment are in volume V.

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SECTION III. STRENGTHENING THE ROLE OF MAJOR GROUPS

Chapter 23

PREAMBLE

23.1. Critical to the effective implementation of the objectives, policies and mechanisms agreed to by Governments in all programme areas of Agenda 21 will be the commitment and genuine involvement of all social groups.

23.2. One of the fundamental prerequisites for the achievement of sustainable development is broad public participation in decision-making. Furthermore, in the more specific context of environment and development, the need for new forms of participation has emerged. This includes the need of individuals, groups and organizations to participate in environmental impact assessment procedures and to know about and participate in decisions, particularly those which potentially affect the communities in which they live and work. Individuals, groups and organizations should have access to information relevant to environment and development held by national authorities, including information on products and activities that have or are likely to have a significant impact on the environment, and information on environmental protection measures.

23.3. Any policies, definitions or rules affecting access to and participation by non-governmental organizations in the work of United Nations institutions or agencies associated with the implementation of Agenda 21 must apply equally to all major groups.

23.4. The programme areas set out below address the means for moving towards real social partnership in support of common efforts for sustainable development.

Chapter 24

GLOBAL ACTION FOR WOMEN TOWARDS SUSTAINABLE AND EQUITABLE DEVELOPMENT

PROGRAMME AREA

Basis for action

24.1. The international community has endorsed several plans of action and conventions for the full, equal and beneficial integration of women in all development activities, in particular the Nairobi Forward-looking Strategies for the Advancement of Women, 1/ which emphasize women's participation in national and international ecosystem management and control of environment degradation. Several conventions, including the Convention on the Elimination of All Forms of Discrimination against Women (General Assembly resolution 34/180, annex) and conventions of ILO and UNESCO have also been adopted to end gender-based discrimination and ensure women access to land and other resources, education and safe and equal employment. Also relevant are the 1990 World Declaration on the Survival, Protection and Development of Children and the Plan of Action for implementing the Declaration (A/45/625, annex). Effective implementation of these programmes will depend on the active involvement of women in economic and political decision-making and will be critical to the successful implementation of Agenda 21.

Objectives

24.2. The following objectives are proposed for national Governments:

(a) To implement the Nairobi Forward-looking Strategies for the Advancement of Women, particularly with regard to women's participation in national ecosystem management and control of environment degradation;

(b) To increase the proportion of women decision makers, planners, technical advisers, managers and extension workers in environment and development fields;

(c) To consider developing and issuing by the year 2000 a strategy of changes necessary to eliminate constitutional, legal, administrative, cultural, behavioural, social and economic obstacles to women's full participation in sustainable development and in public life;

(d) To establish by the year 1995 mechanisms at the national, regional and international levels to assess the implementation and impact of development and environment policies and programmes on women and to ensure their contributions and benefits;

(e) To assess, review, revise and implement, where appropriate, curricula and other educational material, with a view to promoting the

dissemination to both men and women of gender-relevant knowledge and valuation of women's roles through formal and non-formal education, as well as through training institutions, in collaboration with non-governmental organizations;

(f) To formulate and implement clear governmental policies and national guidelines, strategies and plans for the achievement of equality in all aspects of society, including the promotion of women's literacy, education, training, nutrition and health and their participation in key decision-making positions and in management of the environment, particularly as it pertains to their access to resources, by facilitating better access to all forms of credit, particularly in the informal sector, taking measures towards ensuring women's access to property rights as well as agricultural inputs and implements;

(g) To implement, as a matter of urgency, in accordance with country-specific conditions, measures to ensure that women and men have the same right to decide freely and responsibly the number and spacing of their children and have access to information, education and means, as appropriate, to enable them to exercise this right in keeping with their freedom, dignity and personally held values;

(h) To consider adopting, strengthening and enforcing legislation prohibiting violence against women and to take all necessary administrative, social and educational measures to eliminate violence against women in all its forms.

Activities

24.3. Governments should take active steps to implement the following:

(a) Measures to review policies and establish plans to increase the proportion of women involved as decision makers, planners, managers, scientists and technical advisers in the design, development and implementation of policies and programmes for sustainable development;

(b) Measures to strengthen and empower women's bureaux, women's non-governmental organizations and women's groups in enhancing capacity-building for sustainable development;

(c) Measures to eliminate illiteracy among females and to expand the enrolment of women and girls in educational institutions, to promote the goal of universal access to primary and secondary education for girl children and for women, and to increase educational and training opportunities for women and girls in sciences and technology, particularly at the post-secondary level;

(d) Programmes to promote the reduction of the heavy workload of women and girl children at home and outside through the establishment of more and affordable nurseries and kindergartens by Governments, local authorities, employers and other relevant organizations and the sharing of household tasks by men and women on an equal basis, and to promote the provision of

environmentally sound technologies which have been designed, developed and improved in consultation with women, accessible and clean water, an efficient fuel supply and adequate sanitation facilities;

(e) Programmes to establish and strengthen preventive and curative health facilities, which include women-centred, women-managed, safe and effective reproductive health care and affordable, accessible, responsible planning of family size and services, as appropriate, in keeping with freedom, dignity and personally held values. Programmes should focus on providing comprehensive health care, including pre-natal care, education and information on health and responsible parenthood, and should provide the opportunity for all women to fully breastfeed at least during the first four months post-partum. Programmes should fully support women's productive and reproductive roles and well-being and should pay special attention to the need to provide equal and improved health care for all children and to reduce the risk of maternal and child mortality and sickness;

(f) Programmes to support and strengthen equal employment opportunities and equitable remuneration for women in the formal and informal sectors with adequate economic, political and social support systems and services, including child care, particularly day-care facilities and parental leave, and equal access to credit, land and other natural resources;

(g) Programmes to establish rural banking systems with a view to facilitating and increasing rural women's access to credit and to agricultural inputs and implements;

(h) Programmes to develop consumer awareness and the active participation of women, emphasizing their crucial role in achieving changes necessary to reduce or eliminate unsustainable patterns of consumption and production, particularly in industrialized countries, in order to encourage investment in environmentally sound productive activities and induce environmentally and socially friendly industrial development;

(i) Programmes to eliminate persistent negative images, stereotypes, attitudes and prejudices against women through changes in socialization patterns, the media, advertising, and formal and non-formal education;

(j) Measures to review progress made in these areas, including the preparation of a review and appraisal report which includes recommendations to be submitted to the 1995 world conference on women.

24.4. Governments are urged to ratify all relevant conventions pertaining to women if they have not already done so. Those that have ratified conventions should enforce and establish legal, constitutional and administrative procedures to transform agreed rights into domestic legislation and should adopt measures to implement them in order to strengthen the legal capacity of women for full and equal participation in issues and decisions on sustainable development.

24.5. States parties to the Convention on the Elimination of All Forms of Discrimination against Women should review and suggest amendments to it by the year 2000, with a view to strengthening those elements of the Convention related to environment and development, giving special attention to the issue of access and entitlements to natural resources, technology, creative banking facilities and low-cost housing, and the control of pollution and toxicity in the home and workplace. States parties should also clarify the extent of the Convention's scope with respect to the issues of environment and development and request the Committee on the Elimination of Discrimination against Women to develop guidelines regarding the nature of reporting such issues, required under particular articles of the Convention.

(a) Areas requiring urgent action

24.6. Countries should take urgent measures to avert the ongoing rapid environmental and economic degradation in developing countries that generally affects the lives of women and children in rural areas suffering drought, desertification and deforestation, armed hostilities, natural disasters, toxic waste and the aftermath of the use of unsuitable agro-chemical products.

24.7. In order to reach these goals, women should be fully involved in decision-making and in the implementation of sustainable development activities.

(b) Research, data collection and dissemination of information

24.8. Countries should develop gender-sensitive databases, information systems and participatory action-oriented research and policy analyses with the collaboration of academic institutions and local women researchers on the following:

(a) Knowledge and experience on the part of women of the management and conservation of natural resources for incorporation in the databases and information systems for sustainable development;

(b) The impact of structural adjustment programmes on women. In research done on structural adjustment programmes, special attention should be given to the differential impact of those programmes on women, especially in terms of cut-backs in social services, education and health and in the removal of subsidies on food and fuel;

(c) The impact on women of environmental degradation, particularly drought, desertification, toxic chemicals and armed hostilities;

(d) Analysis of the structural linkages between gender relations, environment and development;

(e) The integration of the value of unpaid work, including work that is currently designated "domestic", in resource accounting mechanisms in order better to represent the true value of the contribution of women to the

economy, using revised guidelines for the United Nations System of National Accounts, to be issued in 1993;

(f) Measures to develop and include environmental, social and gender impact analyses as an essential step in the development and monitoring of programmes and policies;

(g) Programmes to create rural and urban training, research and resource centres in developing and developed countries that will serve to disseminate environmentally sound technologies to women.

(c) International and regional cooperation and coordination

24.9. The Secretary-General of the United Nations should review the adequacy of all United Nations institutions, including those with a special focus on the role of women, in meeting development and environment objectives, and make recommendations for strengthening their capacities. Institutions that require special attention in this area include the Division for the Advancement of Women (Centre for Social Development and Humanitarian Affairs, United Nations Office at Vienna), the United Nations Development Fund for Women (UNIFEM), the International Research and Training Institute for the Advancement of Women (INSTRAW) and the women's programmes of regional commissions. The review should consider how the environment and development programmes of each body of the United Nations system could be strengthened to implement Agenda 21 and how to incorporate the role of women in programmes and decisions related to sustainable development.

24.10. Each body of the United Nations system should review the number of women in senior policy-level and decision-making posts and, where appropriate, adopt programmes to increase that number, in accordance with Economic and Social Council resolution 1991/17 on the improvement of the status of women in the Secretariat.

24.11. UNIFEM should establish regular consultations with donors in collaboration with UNICEF, with a view to promoting operational programmes and projects on sustainable development that will strengthen the participation of women, especially low-income women, in sustainable development and in decision-making. UNDP should establish a women's focal point on development and environment in each of its resident representative offices to provide information and promote exchange of experience and information in these fields. Bodies of the United Nations system, governments and non-governmental organizations involved in the follow-up to the Conference and the implementation of Agenda 21 should ensure that gender considerations are fully integrated into all the policies, programmes and activities.

Means of implementation

Financing and cost evaluation

24.12. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this chapter to be about $40 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

Notes

1/ Report of the World Conference to Review and Appraise the Achievements of the United Nations Decade for Women: Equality, Development and Peace, Nairobi, 15-26 July 1985 (United Nations publication, Sales No. E.85.IV.10), chap. I, sect. A.

Chapter 25

CHILDREN AND YOUTH IN SUSTAINABLE DEVELOPMENT

INTRODUCTION

25.1. Youth comprise nearly 30 per cent of the world's population. The involvement of today's youth in environment and development decision-making and in the implementation of programmes is critical to the long-term success of Agenda 21.

PROGRAMME AREAS

A. Advancing the role of youth and actively involving them in the protection of the environment and the promotion of economic and social development

Basis for action

25.2. It is imperative that youth from all parts of the world participate actively in all relevant levels of decision-making processes because it affects their lives today and has implications for their futures. In addition to their intellectual contribution and their ability to mobilize support, they bring unique perspectives that need to be taken into account.

25.3. Numerous actions and recommendations within the international community have been proposed to ensure that youth are provided a secure and healthy future, including an environment of quality, improved standards of living and access to education and employment. These issues need to be addressed in development planning.

Objectives

25.4. Each country should, in consultation with its youth communities, establish a process to promote dialogue between the youth community and Government at all levels and to establish mechanisms that permit youth access to information and provide them with the opportunity to present their perspectives on government decisions, including the implementation of Agenda 21.

25.5. Each country, by the year 2000, should ensure that more than 50 per cent of its youth, gender balanced, are enrolled in or have access to appropriate secondary education or equivalent educational or vocational training programmes by increasing participation and access rates on an annual basis.

25.6. Each country should undertake initiatives aimed at reducing current levels of youth unemployment, particularly where they are disproportionately high in comparison to the overall unemployment rate.

25.7. Each country and the United Nations should support the promotion and creation of mechanisms to involve youth representation in all United Nations processes in order to influence those processes.

25.8. Each country should combat human rights abuses against young people, particularly young women and girls, and should consider providing all youth with legal protection, skills, opportunities and the support necessary for them to fulfil their personal, economic and social aspirations and potentials.

Activities

25.9. Governments, according to their strategies, should take measures to:

(a) Establish procedures allowing for consultation and possible participation of youth of both genders, by 1993, in decision-making processes with regard to the environment, involving youth at the local, national and regional levels;

(b) Promote dialogue with youth organizations regarding the drafting and evaluation of environment plans and programmes or questions on development;

(c) Consider for incorporation into relevant policies the recommendations of international, regional and local youth conferences and other forums that offer youth perspectives on social and economic development and resource management;

(d) Ensure access for all youth to all types of education, wherever appropriate, providing alternative learning structures, ensure that education reflects the economic and social needs of youth and incorporates the concepts of environmental awareness and sustainable development throughout the curricula; and expand vocational training, implementing innovative methods aimed at increasing practical skills, such as environmental scouting;

(e) In cooperation with relevant ministries and organizations, including representatives of youth, develop and implement strategies for creating alternative employment opportunities and provide required training to young men and women;

(f) Establish task forces that include youth and youth non-governmental organizations to develop educational and awareness programmes specifically targeted to the youth population on critical issues pertaining to youth. These task forces should use formal and non-formal educational methods to reach a maximum audience. National and local media, non-governmental organizations, businesses and other organizations should assist in these task forces;

(g) Give support to programmes, projects, networks, national organizations and youth non-governmental organizations to examine the integration of programmes in relation to their project requirements,

encouraging the involvement of youth in project identification, design, implementation and follow-up;

(h) Include youth representatives in their delegations to international meetings, in accordance with the relevant General Assembly resolutions adopted in 1968, 1977, 1985 and 1989.

25.10. The United Nations and international organizations with youth programmes should take measures to:

(a) Review their youth programmes and consider how coordination between them can be enhanced;

(b) Improve the dissemination of relevant information to governments, youth organizations and other non-governmental organizations on current youth positions and activities, and monitor and evaluate the application of Agenda 21;

(c) Promote the United Nations Trust Fund for the International Youth Year and collaborate with youth representatives in the administration of it, focusing particularly on the needs of youth from developing countries.

Means of implementation

Financing and cost evaluation

25.11. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $1.5 million on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

B. Children in sustainable development

Basis for action

25.12. Children not only will inherit the responsibility of looking after the Earth, but in many developing countries they comprise nearly half the population. Furthermore, children in both developing and industrialized countries are highly vulnerable to the effects of environmental degradation. They are also highly aware supporters of environmental thinking. The specific interests of children need to be taken fully into account in the participatory process on environment and development in order to safeguard the future sustainability of any actions taken to improve the environment.

Objectives

25.13. National governments, according to their policies, should take measures to:

(a) Ensure the survival, protection and development of children, in accordance with the goals endorsed by the 1990 World Summit for Children (A/45/625, annex);

(b) Ensure that the interests of children are taken fully into account in the participatory process for sustainable development and environmental improvement.

Activities

25.14. Governments should take active steps to:

(a) Implement programmes for children designed to reach the child-related goals of the 1990s in the areas of environment and development, especially health, nutrition, education, literacy and poverty alleviation;

(b) Ratify the Convention on the Rights of the Child (General Assembly resolution 44/25 of 20 November 1989, annex), at the earliest moment and implement it by addressing the basic needs of youth and children;

(c) Promote primary environmental care activities that address the basic needs of communities, improve the environment for children at the household and community level and encourage the participation and empowerment of local populations, including women, youth, children and indigenous people, towards the objective of integrated community management of resources, especially in developing countries;

(d) Expand educational opportunities for children and youth, including education for environmental and developmental responsibility, with overriding attention to the education of the girl child;

(e) Mobilize communities through schools and local health centres so that children and their parents become effective focal points for sensitization of communities to environmental issues;

(f) Establish procedures to incorporate children's concerns into all relevant policies and strategies for environment and development at the local, regional and national levels, including those concerning allocation of and entitlement to natural resources, housing and recreation needs, and control of pollution and toxicity in both rural and urban areas.

25.15. International and regional organizations should cooperate and coordinate in the proposed areas. UNICEF should maintain cooperation and collaboration with other organizations of the United Nations, Governments and non-governmental organizations to develop programmes for children and programmes to mobilize children in the activities outlined above.

Means of implementation

(a) Financing and cost evaluation

25.16. Financing requirements for most of the activities are included in estimates for other programmes.

(b) Human resource development and capacity-building

25.17. The activities should facilitate capacity-building and training activities already contained in other chapters of Agenda 21.

Chapter 26

RECOGNIZING AND STRENGTHENING THE ROLE OF INDIGENOUS PEOPLE AND THEIR COMMUNITIES

PROGRAMME AREA

Basis for action

26.1. Indigenous people and their communities have an historical relationship with their lands and are generally descendants of the original inhabitants of such lands. In the context of this chapter the term "lands" is understood to include the environment of the areas which the people concerned traditionally occupy. Indigenous people and their communities represent a significant percentage of the global population. They have developed over many generations a holistic traditional scientific knowledge of their lands, natural resources and environment. Indigenous people and their communities shall enjoy the full measure of human rights and fundamental freedoms without hindrance or discrimination. Their ability to participate fully in sustainable development practices on their lands has tended to be limited as a result of factors of an economic, social and historical nature. In view of the interrelationship between the natural environment and its sustainable development and the cultural, social, economic and physical well-being of indigenous people, national and international efforts to implement environmentally sound and sustainable development should recognize, accommodate, promote and strengthen the role of indigenous people and their communities.

26.2. Some of the goals inherent in the objectives and activities of this programme area are already contained in such international legal instruments as the ILO Indigenous and Tribal Peoples Convention (No. 169) and are being incorporated into the draft universal declaration on indigenous rights, being prepared by the United Nations working group on indigenous populations. The International Year for the World's Indigenous People (1993), proclaimed by the General Assembly in its resolution 45/164 of 18 December 1990, presents a timely opportunity to mobilize further international technical and financial cooperation.

Objectives

26.3. In full partnership with indigenous people and their communities, Governments and, where appropriate, intergovernmental organizations should aim at fulfilling the following objectives:

(a) Establishment of a process to empower indigenous people and their communities through measures that include:

(i) Adoption or strengthening of appropriate policies and/or legal instruments at the national level;

(ii) Recognition that the lands of indigenous people and their communities should be protected from activities that are environmentally unsound or that the indigenous people concerned consider to be socially and culturally inappropriate;

(iii) Recognition of their values, traditional knowledge and resource management practices with a view to promoting environmentally sound and sustainable development;

(iv) Recognition that traditional and direct dependence on renewable resources and ecosystems, including sustainable harvesting, continues to be essential to the cultural, economic and physical well-being of indigenous people and their communities;

(v) Development and strengthening of national dispute-resolution arrangements in relation to settlement of land and resource-management concerns;

(vi) Support for alternative environmentally sound means of production to ensure a range of choices on how to improve their quality of life so that they effectively participate in sustainable development;

(vii) Enhancement of capacity-building for indigenous communities, based on the adaptation and exchange of traditional experience, knowledge and resource-management practices, to ensure their sustainable development;

(b) Establishment, where appropriate, of arrangements to strengthen the active participation of indigenous people and their communities in the national formulation of policies, laws and programmes relating to resource management and other development processes that may affect them, and their initiation of proposals for such policies and programmes;

(c) Involvement of indigenous people and their communities at the national and local levels in resource management and conservation strategies and other relevant programmes established to support and review sustainable development strategies, such as those suggested in other programme areas of Agenda 21.

Activities

26.4. Some indigenous people and their communities may require, in accordance with national legislation, greater control over their lands, self-management of their resources, participation in development decisions affecting them, including, where appropriate, participation in the establishment or management of protected areas. The following are some of the specific measures which Governments could take:

(a) Consider the ratification and application of existing international conventions relevant to indigenous people and their communities (where not yet

done) and provide support for the adoption by the General Assembly of a declaration on indigenous rights;

(b) Adopt or strengthen appropriate policies and/or legal instruments that will protect indigenous intellectual and cultural property and the right to preserve customary and administrative systems and practices.

26.5. United Nations organizations and other international development and finance organizations and Governments should, drawing on the active participation of indigenous people and their communities, as appropriate, take the following measures, inter alia, to incorporate their values, views and knowledge, including the unique contribution of indigenous women, in resource management and other policies and programmes that may affect them:

(a) Appoint a special focal point within each international organization, and organize annual interorganizational coordination meetings in consultation with Governments and indigenous organizations, as appropriate, and develop a procedure within and between operational agencies for assisting Governments in ensuring the coherent and coordinated incorporation of the views of indigenous people in the design and implementation of policies and programmes. Under this procedure, indigenous people and their communities should be informed and consulted and allowed to participate in national decision-making, in particular regarding regional and international cooperative efforts. In addition, these policies and programmes should take fully into account strategies based on local indigenous initiatives;

(b) Provide technical and financial assistance for capacity-building programmes to support the sustainable self-development of indigenous people and their communities;

(c) Strengthen research and education programmes aimed at:

(i) Achieving a better understanding of indigenous people's knowledge and management experience related to the environment, and applying this to contemporary development challenges;

(ii) Increasing the efficiency of indigenous people's resource management systems, for example, by promoting the adaptation and dissemination of suitable technological innovations;

(d) Contribute to the endeavours of indigenous people and their communities in resource management and conservation strategies (such as those that may be developed under appropriate projects funded through the Global Environment Facility and the Tropical Forestry Action Plan) and other programme areas of Agenda 21, including programmes to collect, analyse and use data and other information in support of sustainable development projects.

26.6. Governments, in full partnership with indigenous people and their communities should, where appropriate:

(a) Develop or strengthen national arrangements to consult with indigenous people and their communities with a view to reflecting their needs and incorporating their values and traditional and other knowledge and practices in national policies and programmes in the field of natural resource management and conservation and other development programmes affecting them;

(b) Cooperate at the regional level, where appropriate, to address common indigenous issues with a view to recognizing and strengthening their participation in sustainable development.

Means of implementation

(a) Financing and cost evaluation

26.7. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $3 million on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Legal and administrative frameworks

26.8. Governments should incorporate, in collaboration with the indigenous people affected, the rights and responsibilities of indigenous people and their communities in the legislation of each country, suitable to the country's specific situation. Developing countries may require technical assistance to implement these activities.

(c) Human resource development

26.9. International development agencies and Governments should commit financial and other resources to education and training for indigenous people and their communities to develop their capacities to achieve their sustainable self-development, and to contribute to and participate in sustainable and equitable development at the national level. Particular attention should be given to strengthening the role of indigenous women.

Chapter 27

STRENGTHENING THE ROLE OF NON-GOVERNMENTAL ORGANIZATIONS: PARTNERS FOR SUSTAINABLE DEVELOPMENT

PROGRAMME AREA

Basis for action

27.1. Non-governmental organizations play a vital role in the shaping and implementation of participatory democracy. Their credibility lies in the responsible and constructive role they play in society. Formal and informal organizations, as well as grass-roots movements, should be recognized as partners in the implementation of Agenda 21. The nature of the independent role played by non-governmental organizations within a society calls for real participation; therefore, independence is a major attribute of non-governmental organizations and is the precondition of real participation.

27.2. One of the major challenges facing the world community as it seeks to replace unsustainable development patterns with environmentally sound and sustainable development is the need to activate a sense of common purpose on behalf of all sectors of society. The chances of forging such a sense of purpose will depend on the willingness of all sectors to participate in genuine social partnership and dialogue, while recognizing the independent roles, responsibilities and special capacities of each.

27.3. Non-governmental organizations, including those non-profit organizations representing groups addressed in the present section of Agenda 21, possess well-established and diverse experience, expertise and capacity in fields which will be of particular importance to the implementation and review of environmentally sound and socially responsible sustainable development, as envisaged throughout Agenda 21. The community of non-governmental organizations, therefore, offers a global network that should be tapped, enabled and strengthened in support of efforts to achieve these common goals.

27.4. To ensure that the full potential contribution of non-governmental organizations is realized, the fullest possible communication and cooperation between international organizations, national and local governments and non-governmental organizations should be promoted in institutions mandated, and programmes designed to carry out Agenda 21. Non-governmental organizations will also need to foster cooperation and communication among themselves to reinforce their effectiveness as actors in the implementation of sustainable development.

Objectives

27.5. Society, Governments and international bodies should develop mechanisms to allow non-governmental organizations to play their partnership role responsibly and effectively in the process of environmentally sound and sustainable development.

27.6. With a view to strengthening the role of non-governmental organizations as social partners, the United Nations system and Governments should initiate a process, in consultation with non-governmental organizations, to review formal procedures and mechanisms for the involvement of these organizations at all levels from policy-making and decision-making to implementation.

27.7. By 1995, a mutually productive dialogue should be established at the national level between all Governments and non-governmental organizations and their self-organized networks to recognize and strengthen their respective roles in implementing environmentally sound and sustainable development.

27.8. Governments and international bodies should promote and allow the participation of non-governmental organizations in the conception, establishment and evaluation of official mechanisms and formal procedures designed to review the implementation of Agenda 21 at all levels.

Activities

27.9. The United Nations system, including international finance and development agencies, and all intergovernmental organizations and forums should, in consultation with non-governmental organizations, take measures to:

(a) Review and report on ways of enhancing existing procedures and mechanisms by which non-governmental organizations contribute to policy design, decision-making, implementation and evaluation at the individual agency level, in inter-agency discussions and in United Nations conferences;

(b) On the basis of subparagraph (a) above, enhance existing or, where they do not exist, establish, mechanisms and procedures within each agency to draw on the expertise and views of non-governmental organizations in policy and programme design, implementation and evaluation;

(c) Review levels of financial and administrative support for non-governmental organizations and the extent and effectiveness of their involvement in project and programme implementation, with a view to augmenting their role as social partners;

(d) Design open and effective means of achieving the participation of non-governmental organizations in the processes established to review and evaluate the implementation of Agenda 21 at all levels;

(e) Promote and allow non-governmental organizations and their self-organized networks to contribute to the review and evaluation of policies and programmes designed to implement Agenda 21, including support for developing country non-governmental organizations and their self-organized networks;

(f) Take into account the findings of non-governmental review systems and evaluation processes in relevant reports of the Secretary-General to the General Assembly, and of all pertinent United Nations organizations and other intergovernmental organizations and forums concerning implementation of Agenda 21, in accordance with the review process for Agenda 21;

(g) Provide access for non-governmental organizations to accurate and timely data and information to promote the effectiveness of their programmes and activities and their roles in support of sustainable development.

27.10. Governments should take measures to:

(a) Establish or enhance an existing dialogue with non-governmental organizations and their self-organized networks representing various sectors, which could serve to: (i) consider the rights and responsibilities of these organizations; (ii) efficiently channel integrated non-governmental inputs to the governmental policy development process; and (iii) facilitate non-governmental coordination in implementing national policies at the programme level;

(b) Encourage and enable partnership and dialogue between local non-governmental organizations and local authorities in activities aimed at sustainable development;

(c) Involve non-governmental organizations in national mechanisms or procedures established to carry out Agenda 21, making the best use of their particular capacities, especially in the fields of education, poverty alleviation and environmental protection and rehabilitation;

(d) Take into account the findings of non-governmental monitoring and review mechanisms in the design and evaluation of policies concerning the implementation of Agenda 21 at all levels;

(e) Review government education systems to identify ways to include and expand the involvement of non-governmental organizations in the field of formal and informal education and of public awareness;

(f) Make available and accessible to non-governmental organizations the data and information necessary for their effective contribution to research and to the design, implementation and evaluation of programmes.

Means of implementation

(a) Financing and cost evaluation

27.11. Depending on the outcome of review processes and the evolution of views as to how best to build partnership and dialogue between official organizations and groups of non-governmental organizations, relatively limited but unpredictable, costs will be involved at the international and national levels in enhancing consultative procedures and mechanisms. Non-governmental organizations will also require additional funding in support of their establishment of, improvement of or contributions to Agenda 21 monitoring systems. These costs will be significant but cannot be reliably estimated on the basis of existing information.

(b) Capacity-building

27.12. The organizations of the United Nations system and other intergovernmental organizations and forums, bilateral programmes and the private sector, as appropriate, will need to provide increased financial and administrative support for non-governmental organizations and their self-organized networks, in particular those based in developing countries, that contribute to the monitoring and evaluation of Agenda 21 programmes, and provide training for non-governmental organizations (and assist them to develop their own training programmes) at the international and regional levels to enhance their partnership role in programme design and implementation.

27.13. Governments will need to promulgate or strengthen, subject to country-specific conditions, any legislative measures necessary to enable the establishment by non-governmental organizations of consultative groups, and to ensure the right of non-governmental organizations to protect the public interest through legal action.

Chapter 28

LOCAL AUTHORITIES' INITIATIVES IN SUPPORT OF AGENDA 21

PROGRAMME AREA

Basis for action

28.1. Because so many of the problems and solutions being addressed by Agenda 21 have their roots in local activities, the participation and cooperation of local authorities will be a determining factor in fulfilling its objectives. Local authorities construct, operate and maintain economic, social and environmental infrastructure, oversee planning processes, establish local environmental policies and regulations, and assist in implementing national and subnational environmental policies. As the level of governance closest to the people, they play a vital role in educating, mobilizing and responding to the public to promote sustainable development.

Objectives

28.2. The following objectives are proposed for this programme area:

(a) By 1996, most local authorities in each country should have undertaken a consultative process with their populations and achieved a consensus on "a local Agenda 21" for the community;

(b) By 1993, the international community should have initiated a consultative process aimed at increasing cooperation between local authorities;

(c) By 1994, representatives of associations of cities and other local authorities should have increased levels of cooperation and coordination with the goal of enhancing the exchange of information and experience among local authorities;

(d) All local authorities in each country should be encouraged to implement and monitor programmes which aim at ensuring that women and youth are represented in decision-making, planning and implementation processes.

Activities

28.3. Each local authority should enter into a dialogue with its citizens, local organizations and private enterprises and adopt "a local Agenda 21". Through consultation and consensus-building, local authorities would learn from citizens and from local, civic, community, business and industrial organizations and acquire the information needed for formulating the best strategies. The process of consultation would increase household awareness of sustainable development issues. Local authority programmes, policies, laws and regulations to achieve Agenda 21 objectives would be assessed and modified, based on local programmes adopted. Strategies could also be used in supporting proposals for local, national, regional and international funding.

28.4. Partnerships should be fostered among relevant organs and organizations such as UNDP, the United Nations Centre for Human Settlements (Habitat) and UNEP, the World Bank, regional banks, the International Union of Local Authorities, the World Association of the Major Metropolises, Summit of Great Cities of the World, the United Towns Organization and other relevant partners, with a view to mobilizing increased international support for local authority programmes. An important goal would be to support, extend and improve existing institutions working in the field of local authority capacity-building and local environment management. For this purpose:

(a) Habitat and other relevant organs and organizations of the United Nations system are called upon to strengthen services in collecting information on strategies of local authorities, in particular for those that need international support;

(b) Periodic consultations involving both international partners and developing countries could review strategies and consider how such international support could best be mobilized. Such a sectoral consultation would complement concurrent country-focused consultations, such as those taking place in consultative groups and round tables.

28.5. Representatives of associations of local authorities are encouraged to establish processes to increase the exchange of information, experience and mutual technical assistance among local authorities.

Means of implementation

(a) Financing and cost evaluation

28.6. It is recommended that all parties reassess funding needs in this area. The Conference secretariat has estimated the average total annual cost (1993-2000) for strengthening international secretariat services for implementing the activities in this chapter to be about $1 million on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments.

(b) Human resource development and capacity-building

28.7. This programme should facilitate the capacity-building and training activities already contained in other chapters of Agenda 21.

Chapter 29

STRENGTHENING THE ROLE OF WORKERS AND THEIR TRADE UNIONS

PROGRAMME AREA

Basis for action

29.1. Efforts to implement sustainable development will involve adjustments and opportunities at the national and enterprise levels, with workers foremost among those concerned. As their representatives, trade unions are vital actors in facilitating the achievement of sustainable development in view of their experience in addressing industrial change, the extremely high priority they give to protection of the working environment and the related natural environment, and their promotion of socially responsible and economic development. The existing network of collaboration among trade unions and their extensive membership provide important channels through which the concepts and practices of sustainable development can be supported. The established principles of tripartism provide a basis for strengthened collaboration between workers and their representatives, Governments and employers in the implementation of sustainable development.

Objectives

29.2. The overall objective is poverty alleviation and full and sustainable employment, which contribute to safe, clean and healthy environments - the working environment, the community and the physical environment. Workers should be full participants in the implementation and evaluation of activities related to Agenda 21.

29.3. To that end the following objectives are proposed for accomplishment by the year 2000:

(a) To promote ratification of relevant conventions of ILO and the enactment of legislation in support of those conventions;

(b) To establish bipartite and tripartite mechanisms on safety, health and sustainable development;

(c) To increase the number of environmental collective agreements aimed at achieving sustainable development;

(d) To reduce occupational accidents, injuries and diseases according to recognized statistical reporting procedures;

(e) To increase the provision of workers' education, training and retraining, particularly in the area of occupational health and safety and environment.

Activities

(a) Promoting freedom of association

29.4. For workers and their trade unions to play a full and informed role in support of sustainable development, Governments and employers should promote the rights of individual workers to freedom of association and the protection of the right to organize as laid down in ILO conventions. Governments should consider ratifying and implementing those conventions, if they have not already done so.

(b) Strengthening participation and consultation

29.5. Governments, business and industry should promote the active participation of workers and their trade unions in decisions on the design, implementation and evaluation of national and international policies and programmes on environment and development, including employment policies, industrial strategies, labour adjustment programmes and technology transfers.

29.6. Trade unions, employers and Governments should cooperate to ensure that the concept of sustainable development is equitably implemented.

29.7. Joint (employer/worker) or tripartite (employer/worker/Government) collaborative mechanisms at the workplace, community and national levels should be established to deal with safety, health and environment, including special reference to the rights and status of women in the workplace.

29.8. Governments and employers should ensure that workers and their representatives are provided with all relevant information to enable effective participation in these decision-making processes.

29.9. Trade unions should continue to define, develop and promote policies on all aspects of sustainable development.

29.10. Trade unions and employers should establish the framework for a joint environmental policy, and set priorities to improve the working environment and the overall environmental performance of enterprise.

29.11. Trade unions should:

(a) Seek to ensure that workers are able to participate in environmental audits at the workplace and in environmental impact assessments;

(b) Participate in environment and development activities within the local community and promote joint action on potential problems of common concern;

(c) Play an active role in the sustainable development activities of international and regional organizations, particularly within the United Nations system.

(c) Provide adequate training

29.12. Workers and their representatives should have access to adequate training to augment environmental awareness, ensure their safety and health, and improve their economic and social welfare. Such training should ensure that the necessary skills are available to promote sustainable livelihoods and improve the working environment. Trade unions, employers, Governments and international agencies should cooperate in assessing training needs within their respective spheres of activity. Workers and their representatives should be involved in the design and implementation of worker training programmes conducted by employers and Governments.

Means of implementation

(a) Financing and cost evaluation

29.13. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $300 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Capacity-building

29.14. Particular attention should be given to strengthening the capacity of each of the tripartite social partners (Governments and employers' and workers' organizations) to facilitate greater collaboration towards sustainable development.

Chapter 30

STRENGTHENING THE ROLE OF BUSINESS AND INDUSTRY

INTRODUCTION

30.1. Business and industry, including transnational corporations, play a crucial role in the social and economic development of a country. A stable policy regime enables and encourages business and industry to operate responsibly and efficiently and to implement longer-term policies. Increasing prosperity, a major goal of the development process, is contributed primarily by the activities of business and industry. Business enterprises, large and small, formal and informal, provide major trading, employment and livelihood opportunities. Business opportunities available to women are contributing towards their professional development, strengthening their economic role and transforming social systems. Business and industry, including transnational corporations, and their representative organizations should be full participants in the implementation and evaluation of activities related to Agenda 21.

30.2. Through more efficient production processes, preventive strategies, cleaner production technologies and procedures throughout the product life cycle, hence minimizing or avoiding wastes, the policies and operations of business and industry, including transnational corporations, can play a major role in reducing impacts on resource use and the environment. Technological innovations, development, applications, transfer and the more comprehensive aspects of partnership and cooperation are to a very large extent within the province of business and industry.

30.3. Business and industry, including transnational corporations, should recognize environmental management as among the highest corporate priorities and as a key determinant to sustainable development. Some enlightened leaders of enterprises are already implementing "responsible care" and product stewardship policies and programmes, fostering openness and dialogue with employees and the public and carrying out environmental audits and assessments of compliance. These leaders in business and industry, including transnational corporations, are increasingly taking voluntary initiatives, promoting and implementing self-regulations and greater responsibilities in ensuring their activities have minimal impacts on human health and the environment. The regulatory regimes introduced in many countries and the growing consciousness of consumers and the general public and enlightened leaders of business and industry, including transnational corporations, have all contributed to this. A positive contribution of business and industry, including transnational corporations, to sustainable development can increasingly be achieved by using economic instruments such as free market mechanisms in which the prices of goods and services should increasingly reflect the environmental costs of their input, production, use, recycling and disposal subject to country-specific conditions.

30.4. The improvement of production systems through technologies and processes that utilize resources more efficiently and at the same time produce less wastes - achieving more with less - is an important pathway towards sustainability for business and industry. Similarly, facilitating and encouraging inventiveness, competitiveness and voluntary initiatives are necessary for stimulating more varied, efficient and effective options. To address these major requirements and strengthen further the role of business and industry, including transnational corporations, the following two programmes are proposed.

PROGRAMME AREAS

A. Promoting cleaner production

Basis for action

30.5. There is increasing recognition that production, technology and management that use resources inefficiently form residues that are not reused, discharge wastes that have adverse impacts on human health and the environment and manufacture products that when used have further impacts and are difficult to recycle, need to be replaced with technologies, good engineering and management practices and know-how that would minimize waste throughout the product life cycle. The concept of cleaner production implies striving for optimal efficiencies at every stage of the product life cycle. A result would be the improvement of the overall competitiveness of the enterprise. The need for a transition towards cleaner production policies was recognized at the UNIDO-organized ministerial-level Conference on Ecologically Sustainable Industrial Development, held at Copenhagen in October 1991. 1/

Objectives

30.6. Governments, business and industry, including transnational corporations, should aim to increase the efficiency of resource utilization, including increasing the reuse and recycling of residues, and to reduce the quantity of waste discharge per unit of economic output.

Activities

30.7. Governments, business and industry, including transnational corporations, should strengthen partnerships to implement the principles and criteria for sustainable development.

30.8. Governments should identify and implement an appropriate mix of economic instruments and normative measures such as laws, legislations and standards, in consultation with business and industry, including transnational corporations, that will promote the use of cleaner production, with special consideration for small and medium-sized enterprises. Voluntary private initiatives should also be encouraged.

30.9. Governments, business and industry, including transnational corporations, academia and international organizations, should work towards the development and implementation of concepts and methodologies for the internalization of environmental costs into accounting and pricing mechanisms.

30.10. Business and industry, including transnational corporations, should be encouraged:

(a) To report annually on their environmental records, as well as on their use of energy and natural resources;

(b) To adopt and report on the implementation of codes of conduct promoting the best environmental practice, such as the Business Charter on Sustainable Development of the International Chamber of Commerce (ICC) and the chemical industry's responsible care initiative.

30.11. Governments should promote technological and know-how cooperation between enterprises, encompassing identification, assessment, research and development, management marketing and application of cleaner production.

30.12. Industry should incorporate cleaner production policies in its operations and investments, taking also into account its influence on suppliers and consumers.

30.13. Industry and business associations should cooperate with workers and trade unions to continuously improve the knowledge and skills for implementing sustainable development operations.

30.14. Industry and business associations should encourage individual companies to undertake programmes for improved environmental awareness and responsibility at all levels to make these enterprises dedicated to the task of improving environmental performance based on internationally accepted management practices.

30.15. International organizations should increase education, training and awareness activities relating to cleaner production, in collaboration with industry, academia and relevant national and local authorities.

30.16. International and non-governmental organizations, including trade and scientific associations, should strengthen cleaner production information dissemination by expanding existing databases, such as the UNEP International Cleaner Production Clearing House (ICPIC), the UNIDO Industrial and Technological Information Bank (INTIB) and the ICC International Environment Bureau (IEB), and should forge networking of national and international information systems.

B. Promoting responsible entrepreneurship

Basis for action

30.17. Entrepreneurship is one of the most important driving forces for innovations, increasing market efficiencies and responding to challenges and opportunities. Small and medium-sized entrepreneurs, in particular, play a very important role in the social and economic development of a country. Often, they are the major means for rural development, increasing off-farm employment and providing the transitional means for improving the livelihoods of women. Responsible entrepreneurship can play a major role in improving the efficiency of resource use, reducing risks and hazards, minimizing wastes and safeguarding environmental qualities.

Objectives

30.18. The following objectives are proposed:

(a) To encourage the concept of stewardship in the management and utilization of natural resources by entrepreneurs;

(b) To increase the number of entrepreneurs engaged in enterprises that subscribe to and implement sustainable development policies.

Activities

30.19. Governments should encourage the establishment and operations of sustainably managed enterprises. The mix would include regulatory measures, economic incentives and streamlining of administrative procedures to assure maximum efficiency in dealing with applications for approval in order to facilitate investment decisions, advice and assistance with information, infrastructural support and stewardship responsibilities.

30.20. Governments should encourage, in cooperation with the private sector, the establishment of venture capital funds for sustainable development projects and programmes.

30.21. In collaboration with business, industry, academia and international organizations, Governments should support training in the environmental aspects of enterprise management. Attention should also be directed towards apprenticeship schemes for youth.

30.22. Business and industry, including transnational corporations, should be encouraged to establish world-wide corporate policies on sustainable development, arrange for environmentally sound technologies to be available to affiliates owned substantially by their parent company in developing countries without extra external charges, encourage overseas affiliates to modify procedures in order to reflect local ecological conditions and share experiences with local authorities, national Governments and international organizations.

30.23. Large business and industry, including transnational corporations, should consider establishing partnership schemes with small and medium-sized enterprises to help facilitate the exchange of experience in managerial skills, market development and technological know-how, where appropriate, with the assistance of international organizations.

30.24. Business and industry should establish national councils for sustainable development and help promote entrepreneurship in the formal and informal sectors. The inclusion of women entrepreneurs should be facilitated.

30.25. Business and industry, including transnational corporations, should increase research and development of environmentally sound technologies and environmental management systems, in collaboration with academia and the scientific/engineering establishments, drawing upon indigenous knowledge, where appropriate.

30.26. Business and industry, including transnational corporations, should ensure responsible and ethical management of products and processes from the point of view of health, safety and environmental aspects. Towards this end, business and industry should increase self-regulation, guided by appropriate codes, charters and initiatives integrated into all elements of business planning and decision-making, and fostering openness and dialogue with employees and the public.

30.27. Multilateral and bilateral financial aid institutions should continue to encourage and support small- and medium-scale entrepreneurs engaged in sustainable development activities.

30.28. United Nations organizations and agencies should improve mechanisms for business and industry inputs, policy and strategy formulation processes, to ensure that environmental aspects are strengthened in foreign investment.

30.29. International organizations should increase support for research and development on improving the technological and managerial requirements for sustainable development, in particular for small and medium-sized enterprises in developing countries.

Means of implementation

Financing and cost evaluation

30.30. The activities included under this programme area are mostly changes in the orientation of existing activities and additional costs are not expected to be significant. The cost of activities by Governments and international organizations are already included in other programme areas.

Notes

1/ See A/CONF.151/PC/125.

Chapter 31

SCIENTIFIC AND TECHNOLOGICAL COMMUNITY

INTRODUCTION

31.1. The present chapter focuses on how to enable the scientific and technological community, which includes, among others, engineers, architects, industrial designers, urban planners and other professionals and policy makers, to make a more open and effective contribution to the decision-making processes concerning environment and development. It is important that the role of science and technology in human affairs be more widely known and better understood, both by decision makers who help determine public policy and by the general public. The cooperative relationship existing between the scientific and technological community and the general public should be extended and deepened into a full partnership. Improved communication and cooperation between the scientific and technological community and decision makers will facilitate greater use of scientific and technical information and knowledge in policies and programme implementation. Decision makers should create more favourable conditions for improving training and independent research in sustainable development. Existing multidisciplinary approaches will have to be strengthened and more interdisciplinary studies developed between the scientific and technological community and policy makers and with the general public to provide leadership and practical know-how to the concept of sustainable development. The public should be assisted in communicating their sentiments to the scientific and technological community concerning how science and technology might be better managed to affect their lives in a beneficial way. By the same token, the independence of the scientific and technological community to investigate and publish without restriction and to exchange their findings freely must be assured. The adoption and implementation of ethical principles and codes of practice for the scientific and technological community that are internationally accepted could enhance professionalism and may improve and hasten recognition of the value of its contributions to environment and development, recognizing the continuing evolution and uncertainty of scientific knowledge.

PROGRAMME AREAS

A. Improving communication and cooperation among the scientific and technological community, decision makers and the public

Basis for action

31.2. The scientific and technological community and policy makers should increase their interaction in order to implement strategies for sustainable development on the basis of the best available knowledge. This implies that decision makers should provide the necessary framework for rigorous research

and for full and open communication of the findings of the scientific and technological community, and develop with it ways in which research results and the concerns stemming from the findings can be communicated to decision-making bodies so as to better link scientific and technical knowledge with strategic policy and programme formulation. At the same time, this dialogue would assist the scientific and technological community in developing priorities for research and proposing actions for constructive solutions.

Objectives

31.3. The following objectives are proposed:

(a) To extend and open up the decision-making process and broaden the range of developmental and environmental issues where cooperation at all levels between the scientific and technological community and decision makers can take place;

(b) To improve the exchange of knowledge and concerns between the scientific and technological community and the general public in order to enable policies and programmes to be better formulated, understood and supported.

Activities

31.4. Governments should undertake the following activities:

(a) Review how national scientific and technological activities could be more responsive to sustainable development needs as part of an overall effort to strengthen national research and development systems, including through strengthening and widening the membership of national scientific and technological advisory councils, organizations and committees to ensure that:

(i) The full range of national needs for scientific and technological programmes are communicated to Governments and the public;

(ii) The various strands of public opinion are represented;

(b) Promote regional cooperative mechanisms to address regional needs for sustainable development. Such regional cooperative mechanisms could be facilitated through public/private partnerships and provide support to Governments, industry, non-governmental educational institutions and other domestic and international organizations, and by strengthening global professional networks;

(c) Improve and expand scientific and technical inputs through appropriate mechanisms to intergovernmental consultative, cooperative and negotiating processes towards international and regional agreements;

(d) Strengthen science and technology advice to the highest levels of the United Nations, and other international institutions, in order to ensure

the inclusion of science and technology know-how in sustainable development policies and strategies;

(e) Improve and strengthen programmes for disseminating research results of universities and research institutions. This requires recognition of and greater support to the scientists, technologists and teachers who are engaged in communicating and interpreting scientific and technological information to policy makers, professionals in other fields and the general public. Such support should focus on the transfer of skills and the transfer and adaptation of planning techniques. This requires full and open sharing of data and information among scientists and decision makers. The publication of national scientific research reports and technical reports that are understandable and relevant to local sustainable development needs would also improve the interface between science and decision-making, as well as the implementation of scientific results;

(f) Improve links between the official and independent research sectors and industry so that research may become an important element of industrial strategy;

(g) Promote and strengthen the role of women as full partners in the science and technology disciplines;

(h) Develop and implement information technologies to enhance the dissemination of information for sustainable development.

Means of implementation

(a) Financing and cost evaluation

31.5. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $15 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Capacity-building

31.6. Intergovernmental panels on development and environmental issues should be organized, with emphasis on their scientific and technical aspects, and studies of responsiveness and adaptability included in subsequent programmes of action.

B. Promoting codes of practice and guidelines related to science and technology

Basis for action

31.7. Scientists and technologists have a special set of responsibilities which belong to them both as inheritors of a tradition and as professionals and members of disciplines devoted to the search for knowledge and to the need to protect the biosphere in the context of sustainable development.

31.8. Increased ethical awareness in environmental and developmental decision-making should help to place appropriate priorities for the maintenance and enhancement of life-support systems for their own sake, and in so doing ensure that the functioning of viable natural processes is properly valued by present and future societies. Therefore, a strengthening of the codes of practice and guidelines for the scientific and technological community would increase environmental awareness and contribute to sustainable development. It would build up the level of esteem and regard for the scientific and technological community and facilitate the "accountability" of science and technology.

Objectives

31.9. The objective should be to develop, improve and promote international acceptance of codes of practice and guidelines relating to science and technology in which the integrity of life-support systems is comprehensively accounted for and where the important role of science and technology in reconciling the needs of environment and development is accepted. To be effective in the decision-making process, such principles, codes of practice and guidelines must not only be agreed upon by the scientific and technological community, but also recognized by the society as a whole.

Activities

31.10. The following activities could be undertaken:

(a) Strengthening national and international cooperation, including the non-governmental sector, to develop codes of practice and guidelines regarding environmentally sound and sustainable development, taking into account the Rio Declaration and existing codes of practice and guidelines;

(b) Strengthening and establishing national advisory groups on environmental and developmental ethics, in order to develop a common value framework between the scientific and technological community and society as a whole, and promote continuous dialogue;

(c) Extending education and training in developmental and environmental ethical issues to integrate such objectives into education curricula and research priorities;

(d) Reviewing and amending relevant national and international environment and development legal instruments to ensure appropriate codes of practice and guidelines are incorporated into such regulatory machinery.

Means of implementation

(a) Financing and cost evaluation

31.11. The Conferense secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $5 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Capacity-building

31.12. Codes of practice and guidelines, including on appropriate principles, should be developed for and by the scientific and technological community in the pursuit of its research activities and implementation of programmes aimed at sustainable development.

Chapter 32

STRENGTHENING THE ROLE OF FARMERS*

PROGRAMME AREA

Basis for action

32.1. Agriculture occupies one third of the land surface of the Earth, and is the central activity for much of the world's population. Rural activities take place in close contact with nature, adding value to it by producing renewable resources, while at the same time becoming vulnerable to overexploitation and improper management.

32.2. The rural household, indigenous people and their communities, and the family farmer, a substantial number of whom are women, have been the stewards of much of the Earth's resources. Farmers must conserve their physical environment as they depend on it for their sustenance. Over the past 20 years there has been impressive increase in aggregate agricultural production. Yet, in some regions, this increase has been outstripped by population growth or international debt or falling commodity prices. Further, the natural resources that sustain farming activity need proper care, and there is a growing concern about the sustainability of agricultural production systems.

32.3. A farmer-centred approach is the key to the attainment of sustainability in both developed and developing countries and many of the programme areas in Agenda 21 address this objective. A significant number of the rural population in developing countries depend primarily upon small-scale, subsistence-oriented agriculture based on family labour. However, they have limited access to resources, technology, alternative livelihood and means of production. As a result, they are engaged in the overexploitation of natural resources, including marginal lands.

32.4. The sustainable development of people in marginal and fragile ecosystems is also addressed in Agenda 21. The key to the successful implementation of these programmes lies in the motivation and attitudes of individual farmers and government policies that would provide incentives to farmers to manage their natural resources efficiently and in a sustainable way. Farmers, particularly women, face a high degree of economic, legal and institutional uncertainties when investing in their land and other resources. The decentralization of decision-making towards local and community organizations is the key in changing people's behaviour and implementing

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* In this chapter, all references to "farmers" include all rural people who derive their livelihood from activities such as farming, fishing and forest harvesting. The term "farming" also includes fishing and forest harvesting.

sustainable farming strategies. This programme area deals with activities which can contribute to this end.

Objectives

32.5. The following objectives are proposed:

(a) To encourage a decentralized decision-making process through the creation and strengthening of local and village organizations that would delegate power and responsibility to primary users of natural resources;

(b) To support and enhance the legal capacity of women and vulnerable groups with regard to access, use and tenure of land;

(c) To promote and encourage sustainable farming practices and technologies;

(d) To introduce or strengthen policies that would encourage self-sufficiency in low-input and low-energy technologies, including indigenous practices, and pricing mechanisms that internalize environmental costs;

(e) To develop a policy framework that provides incentives and motivation among farmers for sustainable and efficient farming practices;

(f) To enhance the participation of farmers, men and women, in the design and implementation of policies directed towards these ends, through their representative organizations.

Activities

(a) Management-related activities

32.6. National Governments should:

(a) Ensure the implementation of the programmes on sustainable livelihoods, agriculture and rural development, managing fragile ecosystems, water use in agriculture, and integrated management of natural resources;

(b) Promote pricing mechanisms, trade policies, fiscal incentives and other policy instruments that positively affect individual farmer's decisions about an efficient and sustainable use of natural resources, and take full account of the impact of these decisions on household food security, farm incomes, employment and the environment;

(c) Involve farmers and their representative organizations in the formulation of policy;

(d) Protect, recognize and formalize women's access to tenure and use of land, as well as rights to land, access to credit, technology, inputs and training;

(e) Support the formation of farmers' organizations by providing adequate legal and social conditions.

32.7. Support for farmers' organizations could be arranged as follows:

(a) National and international research centres should cooperate with farmers' organizations in developing location-specific environment-friendly farming techniques;

(b) National Governments, multilateral and bilateral development agencies and non-governmental organizations should collaborate with farmers' organizations in formulating agricultural development projects to specific agro-ecological zones.

(b) Data and information

32.8. Governments and farmers' organizations should:

(a) Initiate mechanisms to document, synthesize and disseminate local knowledge, practices and project experiences so that they will make use of the lessons of the past when formulating and implementing policies affecting farming, forest and fishing populations;

(b) Establish networks for the exchange of experiences with regard to farming that help to conserve land, water and forest resources, minimize the use of chemicals and reduce or reutilize farm wastes;

(c) Develop pilot projects and extension services that would seek to build on the needs and knowledge base of women farmers.

(c) International and regional cooperation

32.9. FAO, IFAD, WFP, the World Bank, the regional development banks and other international organizations involved in rural development should involve farmers and their representatives in their deliberations, as appropriate.

32.10. Representative organizations of farmers should establish programmes for the development and support of farmers' organizations, particularly in developing countries.

Means of implementation

(a) Financing and cost evaluation

32.11. The financing needed for this programme area is estimated in chapter 14 (Promoting sustainable agriculture and rural development), particularly in the programme area entitled "Ensuring people's participation and promoting human resource development for sustainable agriculture". The costs shown under chapters 3 (Combating poverty), 12 (Managing fragile ecosystems: combating desertification and drought), and 13 (Managing fragile

ecosystems: sustainable mountain development) are also relevant to this programme area.

(b) Scientific and technological means

32.12. Governments and appropriate international organizations, in collaboration with national research organizations and non-governmental organizations should, as appropriate:

(a) Develop environmentally sound farming technologies that enhance crop yields, maintain land quality, recycle nutrients, conserve water and energy and control pests and weeds;

(b) Conduct studies of high-resource and low-resource agriculture to compare their productivity and sustainability. The research should preferably be conducted under various environmental and sociological settings;

(c) Support research on mechanization that would optimize human labour and animal power and hand-held and animal-drawn equipment that can be easily operated and maintained. The development of farm technologies should take into account farmers' available resources and the role of animals in farming households and the ecology.

(c) Human resource development

32.13. Governments, with the support of multilateral and bilateral development agencies and scientific organizations, should develop curricula for agricultural colleges and training institutions that would integrate ecology into agricultural science. Interdisciplinary programmes in agricultural ecology are essential to the training of a new generation of agricultural scientists and field-level extension agents.

(d) Capacity-building

32.14. Governments should, in the light of each country's specific situation:

(a) Create the institutional and legal mechanisms to ensure effective land tenure to farmers. The absence of legislation indicating land rights has been an obstacle in taking action against land degradation in many farming communities in developing countries;

(b) Strengthen rural institutions that would enhance sustainability through locally managed credit systems and technical assistance, local production and distribution facilities for inputs, appropriate equipment and small-scale processing units, and marketing and distribution systems;

(c) Establish mechanisms to increase access of farmers, in particular women and farmers from indigenous groups, to agricultural training, credit and use of improved technology for ensuring food security.

SECTION IV. MEANS OF IMPLEMENTATION

Chapter 33

FINANCIAL RESOURCES AND MECHANISMS

INTRODUCTION

33.1. The General Assembly, in resolution 44/228 of 22 December 1989, inter alia, decided that the United Nations Conference on Environment and Development should:

> Identify ways and means of providing new and additional financial resources, particularly to developing countries, for environmentally sound development programmes and projects in accordance with national development objectives, priorities and plans and to consider ways of effectively monitoring the provision of such new and additional financial resources, particularly to developing countries, so as to enable the international community to take further appropriate action on the basis of accurate and reliable data;
>
> Identify ways and means of providing additional financial resources for measures directed towards solving major environmental problems of global concern and especially of supporting those countries, in particular developing countries, for which the implementation of such measures would entail a special or abnormal burden, owing, in particular, to their lack of financial resources, expertise or technical capacity;
>
> Consider various funding mechanisms, including voluntary ones, and examine the possibility of a special international fund and other innovative approaches, with a view to ensuring, on a favourable basis, the most effective and expeditious transfer of environmentally sound technologies to developing countries;
>
> Quantify the financial requirements for the successful implementation of Conference decisions and recommendations and identify possible sources, including innovative ones, of additional resources.

33.2. This chapter deals with the financing of the implementation of Agenda 21, which reflects a global consensus integrating environmental considerations into an accelerated development process. For each of the other chapters, the secretariat of the Conference has provided indicative estimates of the total costs of implementation for developing countries and the requirements for grant or other concessional financing needed from the international community. These reflect the need for a substantially increased effort, both by countries themselves and by the international community.

BASIS FOR ACTION

33.3. Economic growth, social development and poverty eradication are the first and overriding priorities in developing countries and are themselves essential to meeting national and global sustainability objectives. In the light of the global benefits to be realized by the implementation of Agenda 21 as a whole, the provision to developing countries of effective means, inter alia, financial resources and technology, without which it will be difficult for them to fully implement their commitments, will serve the common interests of developed and developing countries and of humankind in general, including future generations.

33.4. The cost of inaction could outweigh the financial costs of implementing Agenda 21. Inaction will narrow the choices of future generations.

33.5. For dealing with environmental issues, special efforts will be required. Global and local environmental issues are interrelated. The United Nations Framework Convention on Climate Change and the Convention on Biological Diversity address two of the most important global issues.

33.6. Economic conditions, both domestic and international, that encourage free trade and access to markets will help make economic growth and environmental protection mutually supportive for all countries, particularly for developing countries and countries undergoing the process of transition to a market economy (see chapter 2 for a fuller discussion of these issues).

33.7. International cooperation for sustainable development should also be strengthened in order to support and complement the efforts of developing countries, particularly the least developed countries.

33.8. All countries should assess how to translate Agenda 21 into national policies and programmes through a process that will integrate environment and development considerations. National and local priorities should be established by means that include public participation and community involvement, promoting equal opportunity for men and women.

33.9. For an evolving partnership among all countries of the world, including, in particular, between developed and developing countries, sustainable development strategies and enhanced and predictable levels of funding in support of longer term objectives are required. For that purpose, developing countries should articulate their own priority actions and needs for support and developed countries should commit themselves to addressing these priorities. In this respect, consultative groups and round tables and other nationally based mechanisms can play a facilitative role.

33.10. The implementation of the huge sustainable development programmes of Agenda 21 will require the provision to developing countries of substantial new and additional financial resources. Grant or concessional financing should be provided according to sound and equitable criteria and indicators. The progressive implementation of Agenda 21 should be matched by the provision

of such necessary financial resources. The initial phase will be accelerated by substantial early commitments of concessional funding.

OBJECTIVES

33.11. The objectives are as follows:

(a) To establish measures concerning financial resources and mechanisms for the implementation of Agenda 21;

(b) To provide new and additional financial resources that are both adequate and predictable;

(c) To seek full use and continuing qualitative improvement of funding mechanisms to be utilized for the implementation of Agenda 21.

ACTIVITIES

33.12. Fundamentally, the activities of this chapter are related to the implementation of all the other chapters of Agenda 21.

MEANS OF IMPLEMENTATION

33.13. In general, the financing for the implementation of Agenda 21 will come from a country's own public and private sectors. For developing countries, particularly the least developed countries, ODA is a main source of external funding, and substantial new and additional funding for sustainable development and implementation of Agenda 21 will be required. Developed countries reaffirm their commitments to reach the accepted United Nations target of 0.7 per cent of GNP for ODA and, to the extent that they have not yet achieved that target, agree to augment their aid programmes in order to reach that target as soon as possible and to ensure prompt and effective implementation of Agenda 21. Some countries have agreed to reach the target by the year 2000. It was decided that the Commission on Sustainable Development would regularly review and monitor progress towards this target. This review process should systematically combine the monitoring of the implementation of Agenda 21 with a review of the financial resources available. Those countries that have already reached the target are to be commended and encouraged to continue to contribute to the common effort to make available the substantial additional resources that have to be mobilized. Other developed countries, in line with their support for reform efforts in developing countries, agree to make their best efforts to increase their level of ODA. In this context, the importance of equitable burden-sharing among developed countries is recognized. Other countries, including those undergoing the process of transition to a market economy, may voluntarily augment the contributions of the developed countries.

33.14. Funding for Agenda 21 and other outcomes of the Conference should be provided in a way that maximizes the availability of new and additional resources and uses all available funding sources and mechanisms. These include, among others:

(a) The multilateral development banks and funds:

(i) The International Development Association (IDA). Among the various issues and options that IDA deputies will examine in connection with the forthcoming tenth replenishment of IDA, the statement made by the President of the World Bank at the United Nations Conference on Environment and Development should be given special consideration in order to help the poorest countries meet their sustainable development objectives as contained in Agenda 21;

(ii) Regional and subregional development banks. The regional and subregional development banks and funds should play an increased and more effective role in providing resources on concessional or other favourable terms needed to implement Agenda 21;

(iii) The Global Environment Facility, managed jointly by the World Bank, UNDP and UNEP, whose additional grant and concessional funding is designed to achieve global environmental benefits, should cover the agreed incremental costs of relevant activities under Agenda 21, in particular for developing countries. Therefore, it should be restructured so as to, inter alia:

Encourage universal participation;

Have sufficient flexibility to expand its scope and coverage to relevant programme areas of Agenda 21, with global environmental benefits, as agreed;

Ensure a governance that is transparent and democratic in nature, including in terms of decision-making and operations, by guaranteeing a balanced and equitable representation of the interests of developing countries and giving due weight to the funding efforts of donor countries;

Ensure new and additional financial resources on grant and concessional terms, in particular to developing countries;

Ensure predictability in the flow of funds by contributions from developed countries, taking into account the importance of equitable burden-sharing;

Ensure access to and disbursement of the funds under mutually agreed criteria without introducing new forms of conditionality;

(b) The relevant specialized agencies, other United Nations bodies and other international organizations, which have designated roles to play in supporting national Governments in implementing Agenda 21;

(c) Multilateral institutions for capacity-building and technical cooperation. Necessary financial resources should be provided to UNDP to use its network of field offices and its broad mandate and experience in the field of technical cooperation for facilitating capacity-building at the country level, making full use of the expertise of the specialized agencies and other United Nations bodies within their respective areas of competence, in particular UNEP and including the multilateral and regional development banks;

(d) Bilateral assistance programmes. These programmes will need to be strengthened in order to promote sustainable development;

(e) Debt relief. It is important to achieve durable solutions to the debt problems of low- and middle-income developing countries in order to provide them with the needed means for sustainable development. Measures to address the continuing debt problems of low- and middle-income countries should be kept under review. All creditors in the Paris Club should promptly implement the agreement of December 1991 to provide debt relief for the poorest heavily indebted countries pursuing structural adjustment; debt relief measures should be kept under review so as to address the continuing difficulties of those countries;

(f) Private funding. Voluntary contributions through non-governmental channels, which have been running at about 10 per cent of ODA, might be increased.

33.15. Investment. Mobilization of higher levels of foreign direct investment and technology transfers should be encouraged through national policies that promote investment and through joint ventures and other modalities.

33.16. Innovative financing. New ways of generating new public and private financial resources should be explored, in particular:

(a) Various forms of debt relief, apart from official or Paris Club debt, including greater use of debt swaps;

(b) The use of economic and fiscal incentives and mechanisms;

(c) The feasibility of tradeable permits;

(d) New schemes for fund-raising and voluntary contributions through private channels, including non-governmental organizations;

(e) The reallocation of resources at present committed to military purposes.

33.17. A supportive international and domestic economic climate conducive to sustained economic growth and development is important, particularly for developing countries, in order to achieve sustainability.

33.18. The secretariat of the Conference has estimated the average annual costs (1993-2000) of implementing in developing countries the activities in Agenda 21 to be over $600 billion, including about $125 billion on grant or concessional terms from the international community. These are indicative and order-of-magnitude estimates only, and have not been reviewed by Governments. Actual costs will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

33.19. Developed countries and others in a position to do so should make initial financial commitments to give effect to the decisions of the Conference. They should report on such plans and commitments to the United Nations General Assembly at its forty-seventh session, in 1992.

33.20. Developing countries should also begin to draw up national plans for sustainable development to give effect to the decisions of the Conference.

33.21. Review and monitoring of the financing of Agenda 21 is essential. Questions related to the effective follow-up of the Conference are discussed in chapter 38 (International institutional arrangements). It will be important to review on a regular basis the adequacy of funding and mechanisms, including efforts to reach agreed objectives of the present chapter, including targets where applicable.

Chapter 34

TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGY, COOPERATION AND CAPACITY-BUILDING

INTRODUCTION

34.1. Environmentally sound technologies protect the environment, are less polluting, use all resources in a more sustainable manner, recycle more of their wastes and products, and handle residual wastes in a more acceptable manner than the technologies for which they were substitutes.

34.2. Environmentally sound technologies in the context of pollution are "process and product technologies" that generate low or no waste, for the prevention of pollution. They also cover "end of the pipe" technologies for treatment of pollution after it has been generated.

34.3. Environmentally sound technologies are not just individual technologies, but total systems which include know-how, procedures, goods and services, and equipment as well as organizational and managerial procedures. This implies that when discussing transfer of technologies, the human resource development and local capacity-building aspects of technology choices, including gender-relevant aspects, should also be addressed. Environmentally sound technologies should be compatible with nationally determined socio-economic, cultural and environmental priorities.

34.4. There is a need for favourable access to and transfer of environmentally sound technologies, in particular to developing countries, through supportive measures that promote technology cooperation and that should enable transfer of necessary technological know-how as well as building up of economic, technical, and managerial capabilities for the efficient use and further development of transferred technology. Technology cooperation involves joint efforts by enterprises and Governments, both suppliers of technology and its recipients. Therefore, such cooperation entails an iterative process involving government, the private sector, and research and development facilities to ensure the best possible results from transfer of technology. Successful long-term partnerships in technology cooperation necessarily require continuing systematic training and capacity-building at all levels over an extended period of time.

34.5. The activities proposed in this chapter aim at improving conditions and processes on information, access to and transfer of technology (including the state-of-the-art technology and related know-how), in particular to developing countries, as well as on capacity-building and cooperative arrangements and partnerships in the field of technology, in order to promote sustainable development. New and efficient technologies will be essential to increase the capabilities, in particular of developing countries, to achieve sustainable development, sustain the world's economy, protect the environment, and

alleviate poverty and human suffering. Inherent in these activities is the need to address the improvement of technology currently used and its replacement, when appropriate, with more accessible and more environmentally sound technology.

BASIS FOR ACTION

34.6. This chapter of Agenda 21 is without prejudice to specific commitments and arrangements on transfer of technology to be adopted in specific international instruments.

34.7. The availability of scientific and technological information and access to and transfer of environmentally sound technology are essential requirements for sustainable development. Providing adequate information on the environmental aspects of present technologies consists of two interrelated components: upgrading information on present and state-of-the-art technologies, including their environmental risks, and improving access to environmentally sound technologies.

34.8. The primary goal of improved access to technology information is to enable informed choices, leading to access to and transfer of such technologies and the strengthening of countries' own technological capabilities.

34.9. A large body of useful technological knowledge lies in the public domain. There is a need for the access of developing countries to such technologies as are not covered by patents or lie in the public domain. Developing countries would also need to have access to the know-how and expertise required for the effective utilization of the aforesaid technologies.

34.10. Consideration must be given to the role of patent protection and intellectual property rights along with an examination of their impact on the access to and transfer of environmentally sound technology, in particular to developing countries, as well as to further exploring efficiently the concept of assured access for developing countries to environmentally sound technology in its relation to proprietary rights with a view to developing effective responses to the needs of developing countries in this area.

34.11. Proprietary technology is available through commercial channels, and international business is an important vehicle for technology transfer. Tapping this pool of knowledge and recombining it with local innovations to generate alternative technologies should be pursued. At the same time that concepts and modalities for assured access to environmentally sound technologies, including state-of-the-art technologies, in particular by developing countries, continued to be explored, enhanced access to environmentally sound technologies should be promoted, facilitated and financed as appropriate, while providing fair incentives to innovators that promote research and development of new environmentally sound technologies.

34.12. Recipient countries require technology and strengthened support to help further develop their scientific, technological, professional and related capacities, taking into account existing technologies and capacities. This support would enable countries, in particular developing countries, to make more rational technology choices. These countries could then better assess environmentally sound technologies prior to their transfer and properly apply and manage them, as well as improve upon already existing technologies and adapt them to suit their specific development needs and priorities.

34.13. A critical mass of research and development capacity is crucial to the effective dissemination and use of environmentally sound technologies and their generation locally. Education and training programmes should reflect the needs of specific goal-oriented research activities and should work to produce specialists literate in environmentally sound technology and with an interdisciplinary outlook. Achieving this critical mass involves building the capabilities of craftspersons, technicians and middle-level managers, scientists, engineers and educators, as well as developing their corresponding social or managerial support systems. Transferring environmentally sound technologies also involves innovatively adapting and incorporating them into the local or national culture.

OBJECTIVES

34.14. The following objectives are proposed:

(a) To help to ensure the access, in particular of developing countries, to scientific and technological information, including information on state-of-the-art technologies;

(b) To promote, facilitate, and finance, as appropriate, the access to and the transfer of environmentally sound technologies and corresponding know-how, in particular to developing countries, on favourable terms, including on concessional and preferential terms, as mutually agreed, taking into account the need to protect intellectual property rights as well as the special needs of developing countries for the implementation of Agenda 21;

(c) To facilitate the maintenance and promotion of environmentally sound indigenous technologies that may have been neglected or displaced, in particular in developing countries, paying particular attention to their priority needs and taking into account the complementary roles of men and women;

(d) To support endogenous capacity-building, in particular in developing countries, so they can assess, adopt, manage and apply environmentally sound technologies. This could be achieved through inter alia:

(i) Human resource development;

(ii) Strengthening of institutional capacities for research and development and programme implementation;

(iii) Integrated sector assessments of technology needs, in accordance with countries' plans, objectives and priorities as foreseen in the implementation of Agenda 21 at the national level;

(e) To promote long-term technological partnerships between holders of environmentally sound technologies and potential users.

ACTIVITIES

(a) Development of international information networks which link national, subregional, regional and international systems

34.15. Existing national, subregional, regional and international information systems should be developed and linked through regional clearing-houses covering broad-based sectors of the economy such as agriculture, industry and energy. Such a network might, inter alia, include national, subregional and regional patent offices that are equipped to produce reports on state-of-the-art technology. The clearing-house networks would disseminate information on available technologies, their sources, their environmental risks, and the broad terms under which they may be acquired. They would operate on an information-demand basis and focus on the information needs of the end-users. They would take into account the positive roles and contributions of international, regional and subregional organizations, business communities, trade associations, non-governmental organizations, national Governments, and newly established or strengthened national networks.

34.16. The international and regional clearing-houses would take the initiative, where necessary, in helping users to identify their needs and in disseminating information that meets those needs, including the use of existing news, public information, and communication systems. The disseminated information would highlight and detail concrete cases where environmentally sound technologies were successfully developed and implemented. In order to be effective, the clearing-houses need to provide not only information, but also referrals to other services, including sources of advice, training, technologies and technology assessment. The clearing-houses would thus facilitate the establishment of joint ventures and partnerships of various kinds.

34.17. An inventory of existing and international or regional clearing-houses or information exchange systems should be undertaken by the relevant United Nations bodies. The existing structure should be strengthened and improved when necessary. Additional information systems should be developed, if necessary, in order to fill identified gaps in this international network.

(b) Support of and promotion of access to transfer of technology

34.18. Governments and international organizations should promote, and encourage the private sector to promote, effective modalities for the access and transfer, in particular to developing countries, of environmentally sound technologies by means of activities, including the following:

(a) Formulation of policies and programmes for the effective transfer of environmentally sound technologies that are publicly owned or in the public domain;

(b) Creation of favourable conditions to encourage the private and public sectors to innovate, market and use environmentally sound technologies;

(c) Examination by Governments and, where appropriate, by relevant organizations of existing policies, including subsidies and tax policies, and regulations to determine whether they encourage or impede the access to, transfer of and introduction of environmentally sound technologies;

(d) Addressing, in a framework which fully integrates environment and development, barriers to the transfer of privately owned environmentally sound technologies and adoption of appropriate general measures to reduce such barriers while creating specific incentives, fiscal or otherwise, for the transfer of such technologies;

(e) In the case of privately owned technologies, the adoption of the following measures, in particular for developing countries:

(i) Creation and enhancement by developed countries, as well as other countries which might be in a position to do so, of appropriate incentives, fiscal or otherwise, to stimulate the transfer of environmentally sound technology by companies, in particular to developing countries, as integral to sustainable development;

(ii) Enhancement of the access to and transfer of patent protected environmentally sound technologies, in particular to developing countries;

(iii) Purchase of patents and licences on commercial terms for their transfer to developing countries on non-commercial terms as part of development cooperation for sustainable development, taking into account the need to protect intellectual property rights;

(iv) In compliance with and under the specific circumstances recognized by the relevant international conventions adhered to by States, the undertaking of measures to prevent the abuse of intellectual property rights, including rules with respect to their acquisition through compulsory licensing, with the provision of equitable and adequate compensation;

(v) Provision of financial resources to acquire environmentally sound technologies in order to enable in particular developing countries to implement measures to promote sustainable development that would entail a special or abnormal burden to them;

(f) Development of mechanisms for the access to and transfer of environmentally sound technologies, in particular to developing countries,

while taking into account development in the process of negotiating an international code of conduct on transfer of technology, as decided by UNCTAD at its eighth session, held at Cartagena de Indias, Colombia, in February 1992.

(c) Improvement of the capacity to develop and manage environmentally sound technologies

34.19. Frameworks at subregional, regional and international levels should be established and/or strengthened for the development, transfer and application of environmentally sound technologies and corresponding technical know-how with a special focus on developing countries' needs, by adding such functions to already existing bodies. Such frameworks would facilitate initiatives from both developing and developed countries to stimulate the research, development and transfer of environmentally sound technologies, often through partnerships within and among countries and between the scientific and technological community, industry and Governments.

34.20. National capacities to assess, develop, manage and apply new technologies should be developed. This will require strengthening existing institutions, training of personnel at all levels, and education of the end-user of the technology.

(d) Establishment of a collaborative network of research centres

34.21. A collaborative network of national, subregional, regional and international research centres on environmentally sound technology should be established to enhance the access to and development, management and transfer of environmentally sound technologies, including transfer and cooperation among developing countries and between developed and developing countries, primarily based on existing subregional or regional research, development and demonstration centres which are linked with the national institutions, in close cooperation with the private sector.

(e) Support for programmes of cooperation and assistance

34.22. Support should be provided for programmes of cooperation and assistance, including those provided by United Nations agencies, international organizations, and other appropriate public and private organizations, in particular to developing countries, in the areas of research and development, technological and human resources capacity-building in the fields of training, maintenance, national technology needs assessments, environmental impact assessments, and sustainable development planning.

34.23. Support should also be provided for national, subregional, regional, multilateral and bilateral programmes of scientific research, dissemination of information and technology development among developing countries, including through the involvement of both public and private enterprises and research facilities, as well as funding for technical cooperation among developing countries' programmes in this area. This should include developing links among these facilities to maximize their efficiency in understanding, disseminating and implementing technologies for sustainable development.

34.24. The development of global, regional and subregional programmes should include identification and evaluation of regional, subregional and national need-based priorities. Plans and studies supporting these programmes should provide the basis for potential financing by multilateral development banks, bilateral organizations, private sector interests and non-governmental organizations.

34.25. Visits should be sponsored and, on a voluntary basis, the return of qualified experts from developing countries in the field of environmentally sound technologies who are currently working in developed country institutions should be facilitated.

(f) Technology assessment in support of the management of environmentally sound technology

34.26. The international community, in particular United Nations agencies, international organizations, and other appropriate and private organizations should help exchange experiences and develop capacity for technology needs assessment, in particular in developing countries, to enable them to make choices based on environmentally sound technologies. They should:

(a) Build up technology assessment capacity for the management of environmentally sound technology, including environmental impact and risk assessment, with due regard to appropriate safeguards on the transfer of technologies subject to prohibition on environmental or health grounds;

(b) Strengthen the international network of regional, subregional or national environmentally sound technology assessment centres, coupled with clearing-houses, to tap the technology assessment sources mentioned above for the benefit of all nations. These centres could, in principle, provide advice and training for specific national situations and promote the building up of national capacity in environmentally sound technology assessment. The possibility of assigning this activity to already existing regional organizations should be fully explored before creating entirely new institutions, and funding of this activity through public-private partnerships should also be explored, as appropriate.

(g) Collaborative arrangements and partnerships

34.27. Long-term collaborative arrangements should be promoted between enterprises of developed and developing countries for the development of environmentally sound technologies. Multinational companies, as repositories of scarce technical skills needed for the protection and enhancement of the environment, have a special role and interest in promoting cooperation in and related to technology transfer, as they are important channels for such transfer, and for building a trained human resource pool and infrastructure.

34.28. Joint ventures should be promoted between suppliers and recipients of technologies, taking into account developing countries' policy priorities and objectives. Together with direct foreign investment, these ventures could

constitute important channels of transferring environmentally sound technologies. Through such joint ventures and direct investment, sound environmental management practices could be transferred and maintained.

MEANS OF IMPLEMENTATION

Financing and cost evaluation

34.29. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this chapter to be between $450 million and $600 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

Chapter 35

SCIENCE FOR SUSTAINABLE DEVELOPMENT

INTRODUCTION

35.1. This chapter focuses on the role and the use of the sciences in supporting the prudent management of the environment and development for the daily survival and future development of humanity. The programme areas proposed herein are intended to be over-arching, in order to support the specific scientific requirements identified in the other Agenda 21 chapters. One role of the sciences should be to provide information to better enable formulation and selection of environment and development policies in the decision-making process. In order to fulfil this requirement, it will be essential to enhance scientific understanding, improve long-term scientific assessments, strengthen scientific capacities in all countries and ensure that the sciences are responsive to emerging needs.

35.2. Scientists are improving their understanding in areas such as climatic change, growth in rates of resource consumption, demographic trends, and environmental degradation. Changes in those and other areas need to be taken into account in working out long-term strategies for development. A first step towards improving the scientific basis for these strategies is a better understanding of land, oceans, atmosphere and their interlocking water, nutrient and biogeochemical cycles and energy flows which all form part of the Earth system. This is essential if a more accurate estimate is to be provided of the carrying capacity of the planet Earth and of its resilience under the many stresses placed upon it by human activities. The sciences can provide this understanding through increased research into the underlying ecological processes and through the application of modern, effective and efficient tools that are now available, such as remote-sensing devices, robotic monitoring instruments and computing and modelling capabilities. The sciences are playing an important role in linking the fundamental significance of the Earth system as life support to appropriate strategies for development which build on its continued functioning. The sciences should continue to play an increasing role in providing for an improvement in the efficiency of resource utilization and in finding new development practices, resources, and alternatives. There is a need for the sciences constantly to reassess and promote less intensive trends in resource utilization, including less intensive utilization of energy in industry, agriculture, and transportation. Thus, the sciences are increasingly being understood as an essential component in the search for feasible pathways towards sustainable development.

35.3. Scientific knowledge should be applied to articulate and support the goals of sustainable development, through scientific assessments of current conditions and future prospects for the Earth system. Such assessments, based on existing and emerging innovations within the sciences, should be used in the decision-making process and in the interactive processes between the sciences and policy-making. There needs to be an increased output from the

sciences in order to enhance understanding and facilitate interaction between science and society. An increase in the scientific capacity and capability to achieve these goals will also be required, particularly in developing countries. Of crucial importance is the need for scientists in developing countries to participate fully in international scientific research programmes dealing with the global problems of environment and development so as to allow all countries to participate on equal footing in negotiations on global environmental and developmental issues. In the face of threats of irreversible environmental damage, lack of full scientific understanding should not be an excuse for postponing actions which are justified in their own right. The precautionary approach could provide a basis for policies relating to complex systems that are not yet fully understood and whose consequences of disturbances cannot yet be predicted.

35.4. The programme areas, which are in harmony with the conclusions and recommendations of the International Conference on an Agenda of Science for Environment and Development into the 21st Century (ASCEND 21) are:

(a) Strengthening the scientific basis for sustainable management;

(b) Enhancing scientific understanding;

(c) Improving long-term scientific assessment;

(d) Building up scientific capacity and capability.

PROGRAMME AREAS

A. Strengthening the scientific basis for sustainable management

Basis for action

35.5. Sustainable development requires taking longer-term perspectives, integrating local and regional effects of global change into the development process, and using the best scientific and traditional knowledge available. The development process should be constantly re-evaluated, in light of the findings of scientific research, to ensure that resource utilization has reduced impacts on the Earth system. Even so, the future is uncertain, and there will be surprises. Good environmental and developmental management policies must therefore be scientifically robust, seeking to keep open a range of options to ensure flexibility of response. The precautionary approach is important. Often, there is a communication gap among scientists, policy makers, and the public at large, whose interests are articulated by both governmental and non-governmental organizations. Better communication is required among scientists, decision makers, and the general public.

Objectives

35.6. The primary objective is for each country with the support of international organizations, as requested, to identify the state of its scientific knowledge and its research needs and priorities in order to achieve, as soon as possible, substantial improvements in:

(a) Large-scale widening of the scientific base and strengthening of scientific and research capacities and capabilities - in particular, those of developing countries - in areas relevant to environment and development;

(b) Environmental and developmental policy formulation, building upon the best scientific knowledge and assessments, and taking into account the need to enhance international cooperation and the relative uncertainties of the various processes and options involved;

(c) The interaction between the sciences and decision-making, using the precautionary approach, where appropriate, to change the existing patterns of production and consumption and to gain time for reducing uncertainty with respect to the selection of policy options;

(d) The generation and application of knowledge, especially indigenous and local knowledge, to the capacities of different environments and cultures, to achieve sustained levels of development, taking into account interrelations at the national, regional and international levels;

(e) Improving cooperation between scientists by promoting interdisciplinary research programmes and activities;

(f) Participation of people in setting priorities and in decision-making relating to sustainable development.

Activities

35.7. Countries, with the assistance of international organizations, where required, should:

(a) Prepare an inventory of their natural and social science data holdings relevant to the promotion of sustainable development;

(b) Identify their research needs and priorities in the context of international research efforts;

(c) Strengthen and design appropriate institutional mechanisms at the highest appropriate local, national, subregional and regional levels and within the United Nations system for developing a stronger scientific basis for the improvement of environmental and developmental policy formulation consistent with long-term goals of sustainable development. Current research in this area should be broadened to include more involvement of the public in establishing long-term societal goals for formulating the sustainable development scenarios;

(d) Develop, apply and institute the necessary tools for sustainable development, with regard to:

(i) Quality-of-life indicators covering, for example, health, education, social welfare, state of the environment, and the economy;

(ii) Economic approaches to environmentally sound development and new and improved incentive structures for better resource management;

(iii) Long-term environmental policy formulation, risk management and environmentally sound technology assessment;

(e) Collect, analyse and integrate data on the linkages between the state of ecosystems and the health of human communities in order to improve knowledge of the cost and benefit of different development policies and strategies in relation to health and the environment, particularly in developing countries;

(f) Conduct scientific studies of national and regional pathways to sustainable development, using comparable and complementary methodologies. Such studies, coordinated by an international science effort, should to a large extent involve local expertise and be conducted by multidisciplinary teams from regional networks and/or research centres, as appropriate and according to national capacities and the available resources;

(g) Improve capabilities for determining scientific research priorities at the national, regional and global levels to meet the needs of sustainable development. This is a process that involves scientific judgements regarding short-term and long-term benefits and possible long-term costs and risks. It should be adaptive and responsive to perceived needs and be carried out via transparent, "user-friendly", risk-evaluation methodologies;

(h) Develop methods to link the findings of the established sciences with the indigenous knowledge of different cultures. The methods should be tested using pilot studies. They should be developed at the local level and should concentrate on the links between the traditional knowledge of indigenous groups and corresponding, current "advanced science", with particular focus on disseminating and applying the results to environmental protection and sustainable development.

Means of implementation

(a) Financing and cost evaluation

35.8. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $150 million, including about $30 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon,

inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

35.9. The scientific and technological means include the following:

(a) Supporting new scientific research programmes, including their socio-economic and human aspects, at the community, national, subregional, regional and global levels, to complement and encourage synergies between traditional and conventional scientific knowledge and practices and strengthening interdisciplinary research related to environmental degradation and rehabilitation;

(b) Setting up demonstration models of different types (e.g., socio-economic, environmental conditions) to study methodologies and formulate guidelines;

(c) Supporting research by developing relative-risk evaluation methods to assist policy makers in ranking scientific research priorities.

B. Enhancing scientific understanding

Basis for action

35.10. In order to promote sustainable development, more extensive knowledge is required of the Earth's carrying capacity, including the processes that could either impair or enhance its ability to support life. The global environment is changing more rapidly than at any time in recent centuries; as a result, surprises may be expected, and the next century could see significant environmental changes. At the same time, the human consumption of energy, water and non-renewable resources is increasing, on both a total and a per capita basis, and shortages may ensue in many parts of the world even if environmental conditions were to remain unchanged. Social processes are subject to multiple variations across time and space, regions and culture. They both affect and are influenced by changing environmental conditions. Human factors are key driving forces in these intricate sets of relationships and exert their influence directly on global change. Therefore, study of the human dimensions of the causes and consequences of environmental change and of more sustainable development paths is essential.

Objectives

35.11. One key objective is to improve and increase the fundamental understanding of the linkages between human and natural environmental systems and improve the analytical and predictive tools required to better understand the environmental impacts of development options by:

(a) Carrying out research programmes in order better to understand the carrying capacity of the Earth as conditioned by its natural systems, such as the biogeochemical cycles, the atmosphere/hydrosphere/lithosphere/cryosphere system, the biosphere and biodiversity, the agro-ecosystem and other terrestrial and aquatic ecosystems;

(b) Developing and applying new analytical and predictive tools in order to assess more accurately the ways in which the Earth's natural systems are being increasingly influenced by human actions, both deliberate and inadvertent, and demographic trends, and the impact and consequences of those actions and trends;

(c) Integrating physical, economic and social sciences in order better to understand the impacts of economic and social behaviour on the environment and of environmental degradation on local and global economies.

Activities

35.12. The following activities should be undertaken:

(a) Support development of an expanded monitoring network to describe cycles (for example, global, biogeochemical and hydrological cycles) and test hypotheses regarding their behaviour, and improve research into the interactions among the various global cycles and their consequences at national, subregional, regional and global levels as guides to tolerance and vulnerability;

(b) Support national, subregional, regional and international observation and research programmes in global atmospheric chemistry and the sources and sinks of greenhouse gases, and ensure that the results are presented in a publicly accessible and understandable form;

(c) Support national, subregional, regional and international research programmes on marine and terrestrial systems, strengthen global terrestrial databases of their components, expand corresponding systems for monitoring their changing states and enhance predictive modelling of the Earth system and its subsystems, including modelling of the functioning of these systems assuming different intensities of human impact. The research programmes should include the programmes mentioned in other Agenda 21 chapters which support mechanisms for cooperation and coherence of research programmes on global change;

(d) Encourage coordination of satellite missions, the networks, systems and procedures for processing and disseminating their data; and develop the interface with the research users of Earth observation data and with the United Nations EARTHWATCH system;

(e) Develop the capacity for predicting the responses of terrestrial, freshwater, coastal and marine ecosystems and biodiversity to short- and long-term perturbations of the environment, and develop further restoration ecology;

(f) Study the role of biodiversity and the loss of species in the functioning of ecosystems and the global life-support system;

(g) Initiate a global observing system of parameters needed for the rational management of coastal and mountain zones and significantly expand freshwater quantity/quality monitoring systems, particularly in developing countries;

(h) In order to understand the Earth as a system, develop Earth observation systems from space which will provide integrated, continuous and long-term measurements of the interactions of the atmosphere, hydrosphere and lithosphere, and develop a distribution system for data which will facilitate the utilization of data obtained through observation;

(i) Develop and apply systems and technology that automatically collect, record and transmit data and information to data and analysis centres, in order to monitor marine, terrestrial and atmospheric processes and provide advance warning of natural disasters;

(j) Enhance the contribution of the engineering sciences to multidisciplinary research programmes on the Earth system, in particular with regard to increasing emergency preparedness and reducing the negative effects of major natural disasters;

(k) Intensify research to integrate the physical, economic and social sciences to better understand the impacts of economic and social behaviour on the environment and of environmental degradation on local and global economies and, in particular:

(i) Develop research on human attitudes and behaviour as driving forces central to an understanding of the causes and consequences of environmental change and resource use;

(ii) Promote research on human, economic and social responses to global change;

(l) Support development of new user-friendly technologies and systems that facilitate the integration of multidisciplinary, physical, chemical, biological and social/human processes which, in turn, provide information and knowledge for decision makers and the general public.

Means of implementation

(a) Financing and cost evaluation

35.13. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $2 billion, including about $1.5 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and

financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

35.14. The scientific and technological means include the following:

(a) Supporting and using the relevant national research activities of academia, research institutes and governmental and non-governmental organizations, and promoting their active participation in regional and global programmes, particularly in developing countries;

(b) Increasing the use of appropriate enabling systems and technologies, such as supercomputers, space-based observational technology, Earth- and ocean-based observational technologies, data management and database technologies and, in particular, developing and expanding the Global Climate Observing System.

C. Improving long-term scientific assessment

Basis for action

35.15. Meeting scientific research needs in the environment/development field is only the first step in the support that the sciences can provide for the sustainable development process. The knowledge acquired may then be used to provide scientific assessments (audits) of the current status and for a range of possible future conditions. This implies that the biosphere must be maintained in a healthy state and that losses in biodiversity must be slowed down. Although many of the long-term environmental changes that are likely to affect people and the biosphere are global in scale, key changes can often be made at the national and local levels. At the same time, human activities at the local and regional levels often contribute to global threats - e.g., stratospheric ozone depletion. Thus scientific assessments and projections are required at the global, regional and local levels. Many countries and organizations already prepare reports on the environment and development which review current conditions and indicate future trends. Regional and global assessments could make full use of such reports but should be broader in scope and include the results of detailed studies of future conditions for a range of assumptions about possible future human responses, using the best available models. Such assessments should be designed to map out manageable development pathways within the environmental and socio-economic carrying capacity of each region. Full use should be made of traditional knowledge of the local environment.

Objectives

35.16. The primary objective is to provide assessments of the current status and trends in major developmental and environmental issues at the national,

subregional, regional and global levels on the basis of the best available scientific knowledge in order to develop alternative strategies, including indigenous approaches, for the different scales of time and space required for long-term policy formulation.

Activities

35.17. The following activities should be undertaken:

(a) Coordinate existing data- and statistics-gathering systems relevant to developmental and environmental issues so as to support preparation of long-term scientific assessments - for example, data on resource depletion, import/export flows, energy use, health impacts and demographic trends; apply the data obtained through the activities identified in programme area B to environment/development assessments at the global, regional and local levels; and promote the wide distribution of the assessments in a form that is responsive to public needs and can be widely understood;

(b) Develop a methodology to carry out national and regional audits and a five-year global audit on an integrated basis. The standardized audits should help to refine the pattern and character of development, examining in particular the capacities of global and regional life-supporting systems to meet the needs of human and non-human life forms and identifying areas and resources vulnerable to further degradation. This task would involve the integration of all relevant sciences at the national, regional, and global levels, and would be organized by governmental agencies, non-governmental organizations, universities and research institutions, assisted by international governmental and non-governmental organizations and United Nations bodies, when necessary and as appropriate. These audits should then be made available to the general public.

Means of implementation

Financing and cost evaluation

35.18. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $35 million, including about $18 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

35.19. With regard to the existing data requirements under programme area A, support should be provided for national data collection and warning systems. This would involve setting up database, information and reporting systems, including data assessment and information dissemination in each region.

D. Building up scientific capacity and capability

Basis for action

35.20. In view of the increasing role the sciences have to play in dealing with the issues of environment and development, it is necessary to build up scientific capacity and strengthen such capacity in all countries - particularly in developing countries - to enable them to participate fully in the generation and application of the results of scientific research and development concerning sustainable development. There are many ways to build up scientific and technological capacity. Some of the most important of them are the following: education and training in science and technology; assistance to developing countries to improve infrastructures for research and development which could enable scientists to work more productively; development of incentives to encourage research and development; and greater utilization of their results in the productive sectors of the economy. Such capacity-building would also form the basis for improving public awareness and understanding of the sciences. Special emphasis must be put on the need to assist developing countries to strengthen their capacities to study their own resource bases and ecological systems and manage them better in order to meet national, regional and global challenges. Furthermore, in view of the size and complexity of global environmental problems, a need for more specialists in several disciplines has become evident world wide.

Objectives

35.21. The primary objective is to improve the scientific capacities of all countries - in particular, those of developing countries - with specific regard to:

(a) Education, training and facilities for local research and development and human resource development in basic scientific disciplines and in environment-related sciences, utilizing where appropriate traditional and local knowledge of sustainability;

(b) A substantial increase by the year 2000 in the number of scientists - particularly women scientists - in those developing countries where their number is at present insufficient;

(c) Reducing significantly the exodus of scientists from developing countries and encouraging those who have left to return;

(d) Improving access to relevant information for scientists and decision makers, with the aim of improving public awareness and participation in decision-making;

(e) Involvement of scientists in national, regional and global environmental and developmental research programmes, including multidisciplinary research;

(f) Periodic academic update of scientists from developing countries in their respective fields of knowledge.

Activities

35.22. The following activities should be undertaken:

(a) Promote the education and training of scientists, not only in their disciplines but also in their ability to identify, manage and incorporate environmental considerations into research and development projects; ensure that a sound base in natural systems, ecology and resource management is provided; and develop specialists capable of working in interdisciplinary programmes related to environment and development, including the field of applied social sciences;

(b) Strengthen the scientific infrastructure in schools, universities and research institutions - particularly those in developing countries - by the provision of adequate scientific equipment and access to current scientific literature, for the purpose of achieving and sustaining a critical mass of highly qualified scientists in these countries;

(c) Develop and expand national scientific and technological databases, processing data in unified formats and systems, and allowing full and open access to the depository libraries of regional scientific and technological information networks. Promote submission of scientific and technological information and databases to global or regional data centres and network systems;

(d) Develop and expand regional and global scientific and technological information networks which are based on and linked to national scientific and technological databases; collect, process and disseminate information from regional and global scientific programmes; expand activities to reduce information barriers due to language differences. Increase the applications - particularly in developing countries - of computer-based retrieval systems in order to cope with the growth of scientific literature;

(e) Develop, strengthen and forge new partnerships among national, regional and global capacities to promote the full and open exchange of scientific and technological data and information and to facilitate technical assistance related to environmentally sound and sustainable development. This should be done through the development of mechanisms for the sharing of basic research, data and information, and the improvement and development of international networks and centres, including regional linking with national scientific databases, for research, training and monitoring. Such mechanisms should be designed so as to enhance professional cooperation among scientists in all countries and to establish strong national and regional alliances between industry and research institutions;

(f) Improve and develop new links between existing networks of natural and social scientists and universities at the international level in order to

strengthen national capacities in the formulation of policy options in the field of environment and development;

(g) Compile, analyse and publish information on indigenous environmental and developmental knowledge, and assist the communities that possess such knowledge to benefit from them.

Means of implementation

(a) Financing and cost evaluation

35.23. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $750 million, including about $470 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

35.24. Such means include increasing and strengthening regional multidisciplinary research and training networks and centres making optimal use of existing facilities and associated sustainable development and technology support systems in developing regions. Promote and use the potential of independent initiatives and indigenous innovations and entrepreneurship. The function of such networks and centres could include, for example:

(a) Support and coordination of scientific cooperation among all nations in the region;

(b) Linking with monitoring centres and carrying out assessment of environmental and developmental conditions;

(c) Support and coordination of national studies of pathways towards sustainable development;

(d) Organization of science education and training;

(e) Establishment and maintenance of information, monitoring and assessment systems and databases.

(c) Capacity-building

35.25. Capacity-building includes the following:

(a) Creating conditions (e.g., salaries, equipment, libraries) to ensure that the scientists will work effectively in their home countries;

(b) Enhancing national, regional and global capacities for carrying out scientific research and applying scientific and technological information to environmentally sound and sustainable development. This includes a need to increase financial resources for global and regional scientific and technological information networks, as may be appropriate, so that they will be able to function effectively and efficiently in satisfying the scientific needs of developing countries. Ensure the capacity-building of women by recruiting more women in research and research training.

Chapter 36

PROMOTING EDUCATION, PUBLIC AWARENESS AND TRAINING

INTRODUCTION

36.1. Education, raising of public awareness and training are linked to virtually all areas in Agenda 21, and even more closely to the ones on meeting basic needs, capacity-building, data and information, science, and the role of major groups. This chapter sets out broad proposals, while specific suggestions related to sectoral issues are contained in other chapters. The Declaration and Recommendations of the Tbilisi Intergovernmental Conference on Environmental Education 1/ organized by UNESCO and UNEP and held in 1977, have provided the fundamental principles for the proposals in this document.

36.2. Programme areas described in the present chapter are:

(a) Reorienting education towards sustainable development;

(b) Increasing public awareness;

(c) Promoting training.

PROGRAMME AREAS

A. Reorienting education towards sustainable development

Basis for action

36.3. Education, including formal education, public awareness and training should be recognized as a process by which human beings and societies can reach their fullest potential. Education is critical for promoting sustainable development and improving the capacity of the people to address environment and development issues. While basic education provides the underpinning for any environmental and development education, the latter needs to be incorporated as an essential part of learning. Both formal and non-formal education are indispensable to changing people's attitudes so that they have the capacity to assess and address their sustainable development concerns. It is also critical for achieving environmental and ethical awareness, values and attitudes, skills and behaviour consistent with sustainable development and for effective public participation in decision-making. To be effective, environment and development education should deal with the dynamics of both the physical/biological and socio-economic environment and human (which may include spiritual) development, should be integrated in all disciplines, and should employ formal and non-formal methods and effective means of communication.

Objectives

36.4. Recognizing that countries, regional and international organizations will develop their own priorities and schedules for implementation in accordance with their needs, policies and programmes, the following objectives are proposed:

(a) To endorse the recommendations arising from the World Conference on Education for All: Meeting Basic Learning Needs 2/ (Jomtien, Thailand, 5-9 March 1990) and to strive to ensure universal access to basic education, and to achieve primary education for at least 80 per cent of girls and 80 per cent of boys of primary school age through formal schooling or non-formal education and to reduce the adult illiteracy rate to at least half of its 1990 level. Efforts should focus on reducing the high illiteracy levels and redressing the lack of basic education among women and should bring their literacy levels into line with those of men;

(b) To achieve environmental and development awareness in all sectors of society on a world-wide scale as soon as possible;

(c) To strive to achieve the accessibility of environmental and development education, linked to social education, from primary school age through adulthood to all groups of people;

(d) To promote integration of environment and development concepts, including demography, in all educational programmes, in particular the analysis of the causes of major environment and development issues in a local context, drawing on the best available scientific evidence and other appropriate sources of knowledge, and giving special emphasis to the further training of decision makers at all levels.

Activities

36.5. Recognizing that countries and regional and international organizations will develop their own priorities and schedules for implementation in accordance with their needs, policies and programmes, the following activities are proposed:

(a) All countries are encouraged to endorse the recommendations of the Jomtien Conference and strive to ensure its Framework for Action. This would encompass the preparation of national strategies and actions for meeting basic learning needs, universalizing access and promoting equity, broadening the means and scope of education, developing a supporting policy context, mobilizing resources and strengthening international cooperation to redress existing economic, social and gender disparities which interfere with these aims. Non-governmental organizations can make an important contribution in designing and implementing educational programmes and should be recognized;

(b) Governments should strive to update or prepare strategies aimed at integrating environment and development as a cross-cutting issue into education at all levels within the next three years. This should be done in cooperation with all sectors of society. The strategies should set out policies and activities, and identify needs, cost, means and schedules for their implementation, evaluation and review. A thorough review of curricula should be undertaken to ensure a multidisciplinary approach, with environment and development issues and their socio-cultural and demographic aspects and linkages. Due respect should be given to community-defined needs and diverse knowledge systems, including science, cultural and social sensitivities;

(c) Countries are encouraged to set up national advisory environmental education coordinating bodies or round tables representative of various environmental, developmental, educational, gender and other interests, including non-governmental organizations, to encourage partnerships, help mobilize resources, and provide a source of information and focal point for international ties. These bodies would help mobilize and facilitate different population groups and communities to assess their own needs and to develop the necessary skills to create and implement their own environment and development initiatives;

(d) Educational authorities, with the appropriate assistance from community groups or non-governmental organizations, are recommended to assist or set up pre-service and in-service training programmes for all teachers, administrators, and educational planners, as well as non-formal educators in all sectors, addressing the nature and methods of environmental and development education and making use of relevant experience of non-governmental organizations;

(e) Relevant authorities should ensure that every school is assisted in designing environmental activity work plans, with the participation of students and staff. Schools should involve schoolchildren in local and regional studies on environmental health, including safe drinking water, sanitation and food and ecosystems and in relevant activities, linking these studies with services and research in national parks, wildlife reserves, ecological heritage sites etc.;

(f) Educational authorities should promote proven educational methods and the development of innovative teaching methods for educational settings. They should also recognize appropriate traditional education systems in local communities;

(g) Within two years the United Nations system should undertake a comprehensive review of its educational programmes, encompassing training and public awareness, to reassess priorities and reallocate resources. The UNESCO/UNEP International Environmental Education Programme should, in cooperation with the appropriate bodies of the United Nations system, Governments, non-governmental organizations and others, establish a programme within two years to integrate the decisions of the Conference into the existing United Nations framework adapted to the needs of educators at

different levels and circumstances. Regional organizations and national authorities should be encouraged to elaborate similar parallel programmes and opportunities by conducting an analysis of how to mobilize different sectors of the population in order to assess and address their environmental and development education needs;

(h) There is a need to strengthen, within five years, information exchange by enhancing technologies and capacities necessary to promote environment and development education and public awareness. Countries should cooperate with each other and with the various social sectors and population groups to prepare educational tools that include regional environment and development issues and initiatives, using learning materials and resources suited to their own requirements;

(i) Countries could support university and other tertiary activities and networks for environmental and development education. Cross-disciplinary courses could be made available to all students. Existing regional networks and activities and national university actions which promote research and common teaching approaches on sustainable development should be built upon, and new partnerships and bridges created with the business and other independent sectors, as well as with all countries for technology, know-how, and knowledge exchange;

(j) Countries, assisted by international organizations, non-governmental organizations and other sectors, could strengthen or establish national or regional centres of excellence in interdisciplinary research and education in environmental and developmental sciences, law and the management of specific environmental problems. Such centres could be universities or existing networks in each country or region, promoting cooperative research and information sharing and dissemination. At the global level these functions should be performed by appropriate institutions;

(k) Countries should facilitate and promote non-formal education activities at the local, regional and national levels by cooperating with and supporting the efforts of non-formal educators and other community-based organizations. The appropriate bodies of the United Nations system in cooperation with non-governmental organizations should encourage the development of an international network for the achievement of global educational aims. At the national and local levels, public and scholastic forums should discuss environmental and development issues, and suggest sustainable alternatives to policy makers;

(l) Educational authorities, with appropriate assistance of non-governmental organizations, including women's and indigenous peoples' organizations, should promote all kinds of adult education programmes for continuing education in environment and development, basing activities around elementary/secondary schools and local problems. These authorities and industry should encourage business, industrial and agricultural schools to include such topics in their curricula. The corporate sector could include sustainable development in their education and training programmes.

Programmes at a post-graduate level should include specific courses aiming at the further training of decision makers;

(m) Governments and educational authorities should foster opportunities for women in non-traditional fields and eliminate gender stereotyping in curricula. This could be done by improving enrolment opportunities, including females in advanced programmes as students and instructors, reforming entrance and teacher staffing policies and providing incentives for establishing child-care facilities, as appropriate. Priority should be given to education of young females and to programmes promoting literacy among women;

(n) Governments should affirm the rights of indigenous peoples, by legislation if necessary, to use their experience and understanding of sustainable development to play a part in education and training;

(o) The United Nations could maintain a monitoring and evaluative role regarding decisions of the United Nations Conference on Environment and Development on education and awareness, through the relevant United Nations agencies. With Governments and non-governmental organizations, as appropriate, it should present and disseminate decisions in a variety of forms, and should ensure the continuous implementation and review of the educational implications of Conference decisions, in particular through relevant events and conferences.

Means of implementation

Financing and cost evaluation

36.6. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $8 billion to $9 billion, including about $3.5 billion to $4.5 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

36.7. In the light of country-specific situations, more support for education, training and public awareness activities related to environment and development could be provided, in appropriate cases, through measures such as the following:

(a) Giving higher priority to those sectors in budget allocations, protecting them from structural cutting requirements;

(b) Shifting allocations within existing education budgets in favour of primary education, with focus on environment and development;

(c) Promoting conditions where a larger share of the cost is borne by local communities, with rich communities assisting poorer ones;

(d) Obtaining additional funds from private donors concentrating on the poorest countries, and those with rates of literacy below 40 per cent;

(e) Encouraging debt for education swaps;

(f) Lifting restrictions on private schooling and increasing the flow of funds from and to non-governmental organizations, including small-scale grass-roots organizations;

(g) Promoting the effective use of existing facilities, for example, multiple school shifts, fuller development of open universities and other long-distance teaching;

(h) Facilitating low-cost or no-cost use of mass media for the purposes of education;

(i) Encouraging twinning of universities in developed and developing countries.

B. Increasing public awareness

Basis for action

36.8. There is still a considerable lack of awareness of the interrelated nature of all human activities and the environment, due to inaccurate or insufficient information. Developing countries in particular lack relevant technologies and expertise. There is a need to increase public sensitivity to environment and development problems and involvement in their solutions and foster a sense of personal environmental responsibility and greater motivation and commitment towards sustainable development.

Objective

36.9. The objective is to promote broad public awareness as an essential part of a global education effort to strengthen attitudes, values and actions which are compatible with sustainable development. It is important to stress the principle of devolving authority, accountability and resources to the most appropriate level with preference given to local responsibility and control over awareness-building activities.

Activities

36.10. Recognizing that countries, regional and international organizations will develop their own priorities and schedules for implementation in accordance with their needs, policies and programmes, the following activities are proposed:

(a) Countries should strengthen existing advisory bodies or establish new ones for public environment and development information, and should

coordinate activities with, among others, the United Nations, non-governmental organizations and important media. They should encourage public participation in discussions of environmental policies and assessments. Governments should also facilitate and support national to local networking of information through existing networks;

(b) The United Nations system should improve its outreach in the course of a review of its education and public awareness activities to promote greater involvement and coordination of all parts of the system, especially its information bodies and regional and country operations. Systematic surveys of the impact of awareness programmes should be conducted, recognizing the needs and contributions of specific community groups;

(c) Countries and regional organizations should be encouraged, as appropriate, to provide public environmental and development information services for raising the awareness of all groups, the private sector and particularly decision makers;

(d) Countries should stimulate educational establishments in all sectors, especially the tertiary sector, to contribute more to awareness building. Educational materials of all kinds and for all audiences should be based on the best available scientific information, including the natural, behavioural and social sciences, and taking into account aesthetic and ethical dimensions;

(e) Countries and the United Nations system should promote a cooperative relationship with the media, popular theatre groups, and entertainment and advertising industries by initiating discussions to mobilize their experience in shaping public behaviour and consumption patterns and making wide use of their methods. Such cooperation would also increase the active public participation in the debate on the environment. UNICEF should make child-oriented material available to media as an educational tool, ensuring close cooperation between the out-of-school public information sector and the school curriculum, for the primary level. UNESCO, UNEP and universities should enrich pre-service curricula for journalists on environment and development topics;

(f) Countries, in cooperation with the scientific community, should establish ways of employing modern communication technologies for effective public outreach. National and local educational authorities and relevant United Nations agencies should expand, as appropriate, the use of audio-visual methods, especially in rural areas in mobile units, by producing television and radio programmes for developing countries, involving local participation, employing interactive multimedia methods and integrating advanced methods with folk media;

(g) Countries should promote, as appropriate, environmentally sound leisure and tourism activities, building on The Hague Declaration of Tourism (1989) and the current programmes of the World Tourism Organization and UNEP, making suitable use of museums, heritage sites, zoos, botanical gardens, national parks, and other protected areas;

(h) Countries should encourage non-governmental organizations to increase their involvement in environmental and development problems, through joint awareness initiatives and improved interchange with other constituencies in society;

(i) Countries and the United Nations system should increase their interaction with and include, as appropriate, indigenous people in the management, planning and development of their local environment, and should promote dissemination of traditional and socially learned knowledge through means based on local customs, especially in rural areas, integrating these efforts with the electronic media, whenever appropriate;

(j) UNICEF, UNESCO, UNDP and non-governmental organizations should develop support programmes to involve young people and children in environment and development issues, such as children's and youth hearings and building on decisions of the World Summit for Children (A/45/625, annex);

(k) Countries, the United Nations and non-governmental organizations should encourage mobilization of both men and women in awareness campaigns, stressing the role of the family in environmental activities, women's contribution to transmission of knowledge and social values and the development of human resources;

(l) Public awareness should be heightened regarding the impacts of violence in society.

Means of implementation

Financing and cost evaluation

36.11. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $1.2 billion, including about $110 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

C. Promoting training

Basis for action

36.12. Training is one of the most important tools to develop human resources and facilitate the transition to a more sustainable world. It should have a job-specific focus, aimed at filling gaps in knowledge and skill that would help individuals find employment and be involved in environmental and development work. At the same time, training programmes should promote a greater awareness of environment and development issues as a two-way learning process.

Objectives

36.13. The following objectives are proposed:

(a) To establish or strengthen vocational training programmes that meet the needs of environment and development with ensured access to training opportunities, regardless of social status, age, gender, race or religion;

(b) To promote a flexible and adaptable workforce of various ages equipped to meet growing environment and development problems and changes arising from the transition to a sustainable society;

(c) To strengthen national capacities, particularly in scientific education and training, to enable Governments, employers and workers to meet their environmental and development objectives and to facilitate the transfer and assimilation of new environmentally sound, socially acceptable and appropriate technology and know-how;

(d) To ensure that environmental and human ecological considerations are integrated at all managerial levels and in all functional management areas, such as marketing, production and finance.

Activities

36.14. Countries with the support of the United Nations system should identify workforce training needs and assess measures to be taken to meet those needs. A review of progress in this area could be undertaken by the United Nations system in 1995.

36.15. National professional associations are encouraged to develop and review their codes of ethics and conduct to strengthen environmental connections and commitment. The training and personal development components of programmes sponsored by professional bodies should ensure incorporation of skills and information on the implementation of sustainable development at all points of policy- and decision-making.

36.16. Countries and educational institutions should integrate environmental and developmental issues into existing training curricula and promote the exchange of their methodologies and evaluations.

36.17. Countries should encourage all sectors of society, such as industry, universities, government officials and employees, non-governmental organizations and community organizations, to include an environmental management component in all relevant training activities, with emphasis on meeting immediate skill requirements through short-term formal and in-plant vocational and management training. Environmental management training capacities should be strengthened, and specialized "training of trainers" programmes should be established to support training at the national and enterprise levels. New training approaches for existing environmentally sound practices should be developed that create employment opportunities and make maximum use of local resource-based methods.

36.18. Countries should strengthen or establish practical training programmes for graduates from vocational schools, high schools and universities, in all countries, to enable them to meet labour market requirements and to achieve sustainable livelihoods. Training and retraining programmes should be established to meet structural adjustments which have an impact on employment and skill qualifications.

36.19. Governments are encouraged to consult with people in isolated situations, whether geographically, culturally or socially, to ascertain their needs for training to enable them to contribute more fully to developing sustainable work practices and lifestyles.

36.20. Governments, industry, trade unions, and consumers should promote an understanding of the interrelationship between good environment and good business practices.

36.21. Countries should develop a service of locally trained and recruited environmental technicians able to provide local people and communities, particularly in deprived urban and rural areas, with the services they require, starting from primary environmental care.

36.22. Countries should enhance the ability to gain access to, analyse and effectively use information and knowledge available on environment and development. Existing or established special training programmes should be strengthened to support information needs of special groups. The impact of these programmes on productivity, health, safety and employment should be evaluated. National and regional environmental labour-market information systems should be developed that would supply, on a continuing basis, data on environmental job and training opportunities. Environment and development training resource-guides should be prepared and updated, with information on training programmes, curricula, methodologies and evaluation results at the local, national, regional and international levels.

36.23. Aid agencies should strengthen the training component in all development projects, emphasizing a multidisciplinary approach, promoting awareness and providing the necessary skills for transition to a sustainable society. The environmental management guidelines of UNDP for operational activities of the United Nations system may contribute to this end.

36.24. Existing networks of employers' and workers' organizations, industry associations and non-governmental organizations should facilitate the exchange of experience concerning training and awareness programmes.

36.25. Governments, in cooperation with relevant international organizations, should develop and implement strategies to deal with national, regional and local environmental threats and emergencies, emphasizing urgent practical training and awareness programmes for increasing public preparedness.

36.26. The United Nations system, as appropriate, should extend its training programmes, particularly its environmental training and support activities for employers' and workers' organizations.

Means of implementation

Financing and cost evaluation

36.27. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $5 billion, including about $2 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

Notes

1/ Intergovernmental Conference on Environmental Education: Final Report (Paris, UNESCO, 1978), chap. III.

2/ Final Report of the World Conference on Education for All: Meeting Basic Learning Needs, Jomtien, Thailand, 5-9 March 1990 (New York, Inter-Agency Commission (UNDP, UNESCO, UNICEF, World Bank) for the World Conference on Education for All, 1990).

Chapter 37

NATIONAL MECHANISMS AND INTERNATIONAL COOPERATION FOR CAPACITY-BUILDING IN DEVELOPING COUNTRIES

PROGRAMME AREA

Basis for action

37.1. The ability of a country to follow sustainable development paths is determined to a large extent by the capacity of its people and its institutions as well as by its ecological and geographical conditions. Specifically, capacity-building encompasses the country's human, scientific, technological, organizational, institutional and resource capabilities. A fundamental goal of capacity-building is to enhance the ability to evaluate and address the crucial questions related to policy choices and modes of implementation among development options, based on an understanding of environmental potentials and limits and of needs as perceived by the people of the country concerned. As a result, the need to strengthen national capacities is shared by all countries.

37.2. Building endogenous capacity to implement Agenda 21 will require the efforts of the countries themselves in partnership with relevant United Nations organizations, as well as with developed countries. The international community at the national, subregional and regional levels, municipalities, non-governmental organizations, universities and research centres, and business and other private institutions and organizations could also assist in these efforts. It is essential for individual countries to identify priorities and determine the means for building the capacity and capability to implement Agenda 21, taking into account their environmental and economic needs. Skills, knowledge and technical know-how at the individual and institutional levels are necessary for institution-building, policy analysis and development management, including the assessment of alternative courses of action with a view to enhancing access to and tranfer of technology and promoting economic development. Technical cooperation, including that related to technology transfer and know-how, encompasses the whole range of activities to develop or strengthen individual and group capacities and capabilities. It should serve the purpose of long-term capacity-building and needs to be managed and coordinated by the countries themselves. Technical cooperation, including that related to technology transfer and know-how, is effective only when it is derived from and related to a country's own strategies and priorities on environment and development and when development agencies and Governments define improved and consistent policies and procedures to support this process.

Objectives

37.3. The overall objectives of endogenous capacity-building in this programme area are to develop and improve national and related subregional and

regional capacities and capabilities for sustainable development, with the involvement of the non-governmental sectors. The programme should assist by:

(a) Promoting an ongoing participatory process to define country needs and priorities in promoting Agenda 21 and to give importance to technical and professional human resource development and development of institutional capacities and capabilities on the agenda of countries, with due recognition of the potential for optimum use of existing human resources as well as enhancement of the efficiency of existing institutions and non-governmental organizations, including scientific and technological institutions;

(b) Reorienting technical cooperation and, in that process, setting new priorities in the field, including that related to transfer of technology and know-how processes, while giving due attention to the specific conditions and individual needs of recipients, and improving coordination among providers of assistance for support to countries' own programmes of action. This coordination should also include non-governmental organizations and scientific and technological institutions, as well as business and industry whenever appropriate;

(c) Shifting time horizons in programme planning and implementation for the development and strengthening of institutional structures to permit an enhancement of their ability to respond to new longer-term challenges rather than concentrating only on immediate problems;

(d) Improving and reorienting existing international multilateral institutions with responsibilities for environment and/or development matters to ensure that those institutions have the capability and capacity to integrate environment and development;

(e) Improving institutional capacity and capability, both public and private, in order to evaluate the environmental impact of all development projects.

37.4. Specific objectives include the following:

(a) Each country should aim to complete, as soon as practicable, if possible by 1994, a review of capacity- and capability-building requirements for devising national sustainable development strategies, including those for generating and implementing its own Agenda 21 action programme;

(b) By 1997, the Secretary-General should submit to the General Assembly a report on the achievement of improved policies, coordination systems and procedures for strengthening the implementation of technical cooperation programmes for sustainable development, as well as on additional measures required to strengthen such cooperation. That report should be prepared on the basis of information provided by countries, international organizations, environment and development institutions, donor agencies and non-governmental partners.

Activities

(a) Building a national consensus and formulating capacity-building strategies for implementing Agenda 21

37.5. As an important aspect of overall planning, each country should seek internal consensus at all levels of society on policies and programmes needed for short- and long-term capacity-building to implement its Agenda 21 programme. This consensus should result from a participatory dialogue of relevant interest groups and lead to an identification of skill gaps, institutional capacities and capabilities, technological and scientific requirements and resource needs to enhance environmental knowledge and administration to integrate environment and development. UNDP in partnership with relevant specialized agencies and other international intergovernmental and non-governmental organizations could assist, upon request of Governments, in the identification of the requirements for technical cooperation, including those related to technology transfer and know-how and development assistance for the implementation of Agenda 21. The national planning process together, where appropriate, with national sustainable development action plans or strategies should provide the framework for such cooperation and assistance. UNDP should use and further improve its network of field offices and its broad mandate to provide assistance, using its experience in the field of technical cooperation for facilitating capacity-building at the country and regional levels and making full use of the expertise of other bodies, in particular UNEP, the World Bank and regional commissions and development banks, as well as relevant international intergovernmental and non-governmental organizations.

(b) Identification of national sources and presentation of requests for technical cooperation, including that related to technology transfer and know-how in the framework of sector strategies

37.6. Countries desiring arrangements for technical cooperation, including that related to transfer of technology and know-how, with international organizations and donor institutions should formulate requests in the framework of long-term sector or subsector capacity-building strategies. Strategies should, as appropriate, address policy adjustments to be implemented, budgetary issues, cooperation and coordination among institutions, human resource requirements, and technology and scientific equipment requirements. They should cover public and private sector needs and consider strengthening scientific training and educational and research programmes, including such training in the developed countries and the strengthening of centres of excellence in developing countries. Countries could designate and strengthen a central unit to organize and coordinate technical cooperation, linking it with the priority-setting and the resource allocation process.

(c) Establishment of a review mechanism of technical cooperation in and related to technology transfer and know-how

37.7. Donors and recipients, the organizations and institutions of the United Nations system, and international public and private organizations should review the development of the cooperation process as it relates to technical cooperation, including that related to activities for the transfer of technology and know-how linked to sustainable development. To facilitate this process the Secretary-General could undertake, taking into account work carried out by UNDP and other organizations in preparation for the United Nations Conference on Environment and Development, consultations with developing countries, regional organizations, organizations and institutions of the United Nations system, including regional commissions, and multilateral and bilateral aid and environment agencies, with a view to further strengthening the endogenous capacities of countries and improving technical cooperation, including that related to the technology transfer and know-how process. The following aspects should be reviewed:

(a) Evaluation of existing capacity and capability for the integrated management of environment and development, including technical, technological and institutional capacities and capabilities, and facilities to assess the environmental impact of development projects; and evaluation of abilities to respond to and link up with needs for technical cooperation, including that related to technology transfer and know-how, of Agenda 21 and the global conventions on climate change and biological diversity;

(b) Assessment of the contribution of existing activities in technical cooperation, including that related to transfer of technology and know-how, towards strengthening and building national capacity and capability for integrated environment and development management and an assessment of the means of improving the quality of international technical cooperation, including that related to transfer of technolgy and know-how;

(c) A strategy for shifting to a capacity- and capability-building thrust that recognizes the need for the operational integration of environment and development with longer-term commitments, having as a basis the set of national programmes established by each country, through a participatory process;

(d) Consideration of greater use of long-term cooperative arrangements between municipalities, non-governmental organizations, universities, training and research centres and business, public and private institutions with counterparts in other countries or within countries or regions. Programmes such as the Sustainable Development Networks of UNDP should be assessed in this regard;

(e) Strengthening of the sustainability of projects by including in the original project design consideration of environmental impacts, the costs of institution-building, human resource development and technology needs, as well as financial and organizational requirements for operation and maintenance;

(f) Improvement of technical cooperation, including that related to transfer of technology and know-how and management processes, by giving greater attention to capacity- and capability-building as an integral part of sustainable development strategies for environment and development programmes both in country-related coordination processes, such as consultative groups and round tables, and in sectoral coordination mechanisms to enable developing countries to participate actively in obtaining assistance from different sources.

(d) Enhancement of the expertise and collective contribution of the United Nations system for capacity- and capability-building initiatives

37.8. Organizations, organs, bodies and institutions of the United Nations system, together with other international and regional organizations and the public and private sectors, could, as appropriate, strengthen their joint activities in technical cooperation, including that related to transfer of technology and know-how, in order to address linked environment and development issues and to promote coherence and consistency of action. Organizations could assist and reinforce countries, particularly least developed countries, upon request, on matters relating to national environmental and developmental policies, human resource development and fielding of experts, legislation, natural resources and environmental data.

37.9. UNDP, the World Bank and regional multilateral development banks, as part of their participation in national and regional coordination mechanisms, should assist in facilitating capacity- and capability-building at the country level, drawing upon the special expertise and operational capacity of UNEP in the environmental field as well as of the specialized agencies, organizations of the United Nations system and regional and subregional organizations in their respective areas of competence. For this purpose UNDP should mobilize funding for capacity- and capability-building, utilizing its network of field offices and its broad mandate and experience in the field of technical cooperation, including that related to transfer of technology and know-how. UNDP, together with these international organizations, should at the same time continue to develop consultative processes to enhance the mobilization and coordination of funds from the international community for capacity- and capability-building, including the establishment of an appropriate database. These responsibilities may need to be accompanied by strengthening of the capacities of UNDP.

37.10. The national entity in charge of technical cooperation, with the assistance of the UNDP resident representatives and the UNEP representatives, should establish a small group of key actors to steer the process, giving priority to the country's own strategies and priorities. The experience gained through existing planning exercises such as the national reports for the United Nations Conference on Environment and Development, national conservation strategies and environment action plans should be fully used and incorporated into a country-driven, participatory and sustainable development strategy. This should be complemented with information networks and consultations with donor organizations in order to improve coordination, as

well as access to the existing body of scientific and technical knowledge and information available in institutions elsewhere.

(e) Harmonization of the delivery of assistance at the regional level

37.11. At the regional level, existing organizations should consider the desirability of improved regional and subregional consultative processes and round-table meetings to facilitate the exchange of data, information and experience in the implementation of Agenda 21. UNDP, building on the results of the regional surveys on capacity-building that those regional organizations carried out on the United Nations Conference on Environment and Development initiative, and in collaboration with existing regional, subregional or national organizations with potential for regional coordination, should provide a significant input for this purpose. The relevant national unit should establish a steering mechanism. A periodic review mechanism should be established among the countries of the region with the assistance of the appropriate relevant regional organizations and the participation of development banks, bilateral aid agencies and non-governmental organizations. Other possibilities are to develop national and regional research and training facilities building on existing regional and subregional institutions.

Means of implementation

Financing and cost evaluation

37.12. The cost of bilateral expenditures to developing countries for technical cooperation, including that related to transfer of technology and know-how, is about $15 billion or about 25 per cent of total official development assistance. The implementation of Agenda 21 will require a more effective use of these funds and additional funding in key areas.

37.13. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this chapter to be between $300 million and $1 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

Chapter 38

INTERNATIONAL INSTITUTIONAL ARRANGEMENTS

BASIS FOR ACTION

38.1. The mandate of the United Nations Conference on Environment and Development emanates from General Assembly resolution 44/228, in which the Assembly, inter alia, affirmed that the Conference should elaborate strategies and measures to halt and reverse the effects of environmental degradation in the context of increased national and international efforts to promote sustainable and environmentally sound development in all countries and that the promotion of economic growth in developing countries is essential to address problems of environmental degradation. The intergovernmental follow-up to the Conference process shall be within the framework of the United Nations system, with the General Assembly being the supreme policy-making forum that would provide overall guidance to Governments, the United Nations system and relevant treaty bodies. At the same time, Governments, as well as regional economic and technical cooperation organizations, have a responsibility to play an important role in the follow-up to the Conference. Their commitments and actions should be adequately supported by the United Nations system and multilateral financial institutions. Thus, national and international efforts would mutually benefit from one another.

38.2. In fulfilling the mandate of the Conference, there is a need for institutional arrangements within the United Nations system in conformity with, and providing input into, the restructuring and revitalization of the United Nations in the economic, social and related fields, and the overall reform of the United Nations, including ongoing changes in the Secretariat. In the spirit of reform and revitalization of the United Nations system, implementation of Agenda 21 and other conclusions of the Conference shall be based on an action- and result-oriented approach and consistent with the principles of universality, democracy, transparency, cost-effectiveness and accountability.

38.3. The United Nations system, with its multisectoral capacity and the extensive experience of a number of specialized agencies in various spheres of international cooperation in the field of environment and development, is uniquely positioned to assist Governments to establish more effective patterns of economic and social development with a view to achieving the objectives of Agenda 21 and sustainable development.

38.4. All agencies of the United Nations system have a key role to play in the implementation of Agenda 21 within their respective competence. To ensure proper coordination and avoid duplication in the implementation of Agenda 21, there should be an effective division of labour between various parts of the United Nations system based on their terms of reference and comparative advantages. Member States, through relevant governing bodies, are in a

position to ensure that these tasks are carried out properly. In order to facilitate evaluation of agencies' performance and promote knowledge of their activities, all bodies of the United Nations system should be required to elaborate and publish reports of their activities concerning the implementation of Agenda 21 on a regular basis. Serious and continuous reviews of their policies, programmes, budgets and activities will also be required.

38.5. The continued active and effective participation of non-governmental organizations, the scientific community and the private sector, as well as local groups and communities, are important in the implementation of Agenda 21.

38.6. The institutional structure envisaged below will be based on agreement on financial resources and mechanisms, technology transfer, the Rio Declaration and Agenda 21. In addition, there has to be an effective link between substantive action and financial support, and this requires close and effective cooperation and exchange of information between the United Nations system and the multilateral financial institutions for the follow-up of Agenda 21 within the institutional arrangement.

OBJECTIVES

38.7. The overall objective is the integration of environment and development issues at national, subregional, regional and international levels, including in the United Nations system institutional arrangements.

38.8. Specific objectives shall be:

(a) To ensure and review the implementation of Agenda 21 so as to achieve sustainable development in all countries;

(b) To enhance the role and functioning of the United Nations system in the field of environment and development. All relevant agencies, organizations and programmes of the United Nations system should adopt concrete programmes for the implementation of Agenda 21 and also provide policy guidance for United Nations activities or advice to Governments, upon request, within their areas of competence;

(c) To strengthen cooperation and coordination on environment and development in the United Nations system;

(d) To encourage interaction and cooperation between the United Nations system and other intergovernmental and non-governmental subregional, regional and global institutions and non-governmental organizations in the field of environment and development;

(e) To strengthen institutional capabilities and arrangements required for the effective implementation, follow-up and review of Agenda 21;

(f) To assist in the strengthening and coordination of national, subregional and regional capacities and actions in the areas of environment and development;

(g) To establish effective cooperation and exchange of information between United Nations organs, organizations, programmes and the multilateral financial bodies, within the institutional arrangements for the follow-up of Agenda 21;

(h) To respond to continuing and emerging issues relating to environment and development;

(i) To ensure that any new institutional arrangements would support revitalization, clear division of responsibilities and the avoidance of duplication in the United Nations system and depend to the maximum extent possible upon existing resources.

INSTITUTIONAL STRUCTURE

A. General Assembly

38.9. The General Assembly, as the highest intergovernmental mechanism, is the principal policy-making and appraisal organ on matters relating to the follow-up of the Conference. The Assembly would organize a regular review of the implementation of Agenda 21. In fulfilling this task, the Assembly could consider the timing, format and organizational aspects of such a review. In particular, the Assembly could consider holding a special session not later than 1997 for the overall review and appraisal of Agenda 21, with adequate preparations at a high level.

B. Economic and Social Council

38.10. The Economic and Social Council, in the context of its role under the Charter vis-à-vis the General Assembly and the ongoing restructuring and revitalization of the United Nations in the economic, social and related fields, would assist the General Assembly by overseeing system-wide coordination in the implementation of Agenda 21 and making recommendations in this regard. In addition, the Council would undertake the task of directing system-wide coordination and integration of environmental and developmental aspects of United Nations policies and programmes and would make appropriate recommendations to the General Assembly, specialized agencies concerned and Member States. Appropriate steps should be taken to obtain regular reports from specialized agencies on their plans and programmes related to the implementation of Agenda 21, pursuant to Article 64 of the Charter of the United Nations. The Economic and Social Council should organize a periodic review of the work of the Commission on Sustainable Development envisaged in paragraph 38.11, as well as of system-wide activities to integrate environment and development, making full use of its high-level and coordination segments.

C. Commission on Sustainable Development

38.11. In order to ensure the effective follow-up of the Conference, as well as to enhance international cooperation and rationalize the intergovernmental decision-making capacity for the integration of environment and development issues and to examine the progress in the implementation of Agenda 21 at the national, regional and international levels, a high-level Commission on Sustainable Development should be established in accordance with Article 68 of the Charter of the United Nations. This Commission would report to the Economic and Social Council in the context of the Council's role under the Charter vis-à-vis the General Assembly. It would consist of representatives of States elected as members with due regard to equitable geographical distribution. Representatives of non-member States of the Commission would have observer status. The Commission should provide for the active involvement of organs, programmes and organizations of the United Nations system, international financial institutions and other relevant intergovernmental organizations, and encourage the participation of non-governmental organizations, including industry and the business and scientific communities. The first meeting of the Commission should be convened no later than 1993. The Commission should be supported by the secretariat envisaged in paragraph 38.19. Meanwhile the Secretary-General of the United Nations is requested to ensure adequate interim administrative secretariat arrangements.

38.12. The General Assembly, at its forty-seventh session, should determine specific organizational modalities for the work of this Commission, such as its membership, its relationship with other intergovernmental United Nations bodies dealing with matters related to environment and development, and the frequency, duration and venue of its meetings. These modalities should take into account the ongoing process of revitalization and restructuring of the work of the United Nations in the economic, social and related fields, in particular measures recommended by the General Assembly in resolutions 45/264 of 13 May 1991 and 46/235 of 13 April 1992 and other relevant Assembly resolutions. In this respect, the Secretary-General of the United Nations, with the assistance of the Secretary-General of the United Nations Conference on Environment and Development, is requested to prepare for the Assembly a report with appropriate recommendations and proposals.

38.13. The Commission on Sustainable Development should have the following functions:

(a) To monitor progress in the implementation of Agenda 21 and activities related to the integration of environmental and developmental goals throughout the United Nations system through analysis and evaluation of reports from all relevant organs, organizations, programmes and institutions of the United Nations system dealing with various issues of environment and development, including those related to finance;

(b) To consider information provided by Governments, including, for example, information in the form of periodic communications or national

reports regarding the activities they undertake to implement Agenda 21, the problems they face, such as problems related to financial resources and technology transfer, and other environment and development issues they find relevant;

(c) To review the progress in the implementation of the commitments contained in Agenda 21, including those related to provision of financial resources and transfer of technology;

(d) To receive and analyse relevant input from competent non-governmental organizations, including the scientific and private sectors, in the context of the overall implementation of Agenda 21;

(e) To enhance the dialogue, within the framework of the United Nations, with non-governmental organizations and the independent sector, as well as other entities outside the United Nations system;

(f) To consider, where appropriate, information regarding the progress made in the implementation of environmental conventions, which could be made available by the relevant Conferences of Parties;

(g) To provide appropriate recommendations to the General Assembly through the Economic and Social Council on the basis of an integrated consideration of the reports and issues related to the implementation of Agenda 21;

(h) To consider, at an appropriate time, the results of the review to be conducted expeditiously by the Secretary-General of all recommendations of the Conference for capacity-building programmes, information networks, task forces and other mechanisms to support the integration of environment and development at regional and subregional levels.

38.14. Within the intergovernmental framework, consideration should be given to allowing non-governmental organizations, including those related to major groups, particularly women's groups, committed to the implementation of Agenda 21 to have relevant information available to them, including information, reports and other data produced within the United Nations system.

D. The Secretary-General

38.15. Strong and effective leadership on the part of the Secretary-General is crucial, since he/she would be the focal point of the institutional arrangements within the United Nations system for the successful follow-up to the Conference and for the implementation of Agenda 21.

E. High-level inter-agency coordination mechanism

38.16. Agenda 21, as the basis for action by the international community to integrate environment and development, should provide the principal framework for coordination of relevant activities within the United Nations system. To ensure effective monitoring, coordination and supervision of the involvement of the United Nations system in the follow-up to the Conference, there is a need for a coordination mechanism under the direct leadership of the Secretary-General.

38.17. This task should be given to the Administrative Committee on Coordination (ACC), headed by the Secretary-General. ACC would thus provide a vital link and interface between the multilateral financial institutions and other United Nations bodies at the highest administrative level. The Secretary-General should continue to revitalize the functioning of the Committee. All heads of agencies and institutions of the United Nations system shall be expected to cooperate with the Secretary-General fully in order to make ACC work effectively in fulfilling its crucial role and ensure successful implementation of Agenda 21. ACC should consider establishing a special task force, subcommittee or sustainable development board, taking into account the experience of the Designated Officials for Environmental Matters (DOEM) and the Committee of International Development Institutions on Environment (CIDIE), as well as the respective roles of UNEP and UNDP. Its report should be submitted to the relevant intergovernmental bodies.

F. High-level advisory body

38.18. Intergovernmental bodies, the Secretary-General and the United Nations system as a whole may also benefit from the expertise of a high-level advisory board consisting of eminent persons knowledgeable about environment and development, including relevant sciences, appointed by the Secretary-General in their personal capacity. In this regard, the Secretary-General should make appropriate recommendations to the General Assembly at its forty-seventh session.

G. Secretariat support structure

38.19. A highly qualified and competent secretariat support structure within the United Nations Secretariat, drawing, inter alia, on the expertise gained in the Conference preparatory process is essential for the follow-up to the Conference and the implementation of Agenda 21. This secretariat support structure should provide support to the work of both intergovernmental and inter-agency coordination mechanisms. Concrete organizational decisions fall within the competence of the Secretary-General as the chief administrative officer of the Organization, who is requested to report on the provisions to be made, covering staffing implications, as soon as practicable, taking into account gender balance as defined in Article 8 of the Charter of the United Nations and the need for the best use of existing resources in the context of the current and ongoing restructuring of the United Nations Secretariat.

H. Organs, programmes and organizations of the United Nations system

38.20. In the follow-up to the Conference, in particular the implementation of Agenda 21, all relevant organs, programmes and organizations of the United Nations system will have an important role within their respective areas of expertise and mandates in supporting and supplementing national efforts. Coordination and mutual complementarity of their efforts to promote integration of environment and development can be enhanced by encouraging countries to maintain consistent positions in the various governing bodies.

1. United Nations Environment Programme

38.21. In the follow-up to the Conference, there will be a need for an enhanced and strengthened role for UNEP and its Governing Council. The Governing Council should, within its mandate, continue to play its role with regard to policy guidance and coordination in the field of the environment, taking into account the development perspective.

38.22. Priority areas on which UNEP should concentrate include the following:

(a) Strengthening its catalytic role in stimulating and promoting environmental activities and considerations throughout the United Nations system;

(b) Promoting international cooperation in the field of environment and recommending, as appropriate, policies to this end;

(c) Developing and promoting the use of such techniques as natural resource accounting and environmental economics;

(d) Environmental monitoring and assessment, both through improved participation by the United Nations system agencies in the Earthwatch programme and expanded relations with private scientific and non-governmental research institutes; strengthening and making operational its early-warning function;

(e) Coordination and promotion of relevant scientific research with a view to providing a consolidated basis for decision-making;

(f) Dissemination of environmental information and data to Governments and to organs, programmes and organizations of the United Nations system;

(g) Raising general awareness and action in the area of environmental protection through collaboration with the general public, non-governmental entities and intergovernmental institutions;

(h) Further development of international environmental law, in particular conventions and guidelines, promotion of its implementation, and coordinating functions arising from an increasing number of international legal agreements, inter alia, the functioning of the secretariats of the Conventions, taking into account the need for the most efficient use of resources, including possible co-location of secretariats established in the future;

(i) Further development and promotion of the widest possible use of environmental impact assessments, including activities carried out under the auspices of specialized agencies of the United Nations system, and in connection with every significant economic development project or activity;

(j) Facilitation of information exchange on environmentally sound technologies, including legal aspects, and provision of training;

(k) Promotion of subregional and regional cooperation and support to relevant initiatives and programmes for environmental protection, including playing a major contributing and coordinating role in the regional mechanisms in the field of environment identified for the follow-up to the Conference;

(l) Provision of technical, legal and institutional advice to Governments, upon request, in establishing and enhancing their national legal and institutional frameworks, in particular, in cooperation with UNDP capacity-building efforts;

(m) Support to Governments, upon request, and development agencies and organs in the integration of environmental aspects into their development policies and programmes, in particular through provision of environmental, technical and policy advice during programme formulation and implementation;

(n) Further developing assessment and assistance in cases of environmental emergencies.

38.23. In order to perform all of these functions, while retaining its role as the principal body within the United Nations system in the field of environment and taking into account the development aspects of environmental questions, UNEP would require access to greater expertise and provision of adequate financial resources and it would require closer cooperation and collaboration with development organs and other relevant organs of the United Nations system. Furthermore, the regional offices of UNEP should be strengthened without weakening its headquarters in Nairobi, and UNEP should take steps to reinforce and intensify its liaison and interaction with UNDP and the World Bank.

2. United Nations Development Programme

38.24. UNDP, like UNEP, also has a crucial role in the follow-up to the United Nations Conference on Environment and Development. Through its network of field offices it would foster the United Nations system's collective thrust in support of the implementation of Agenda 21, at the country, regional, interregional and global levels, drawing on the expertise of the specialized agencies and other United Nations organizations and bodies involved in operational activities. The role of the resident representative/resident coordinator of UNDP needs to be strengthened in order to coordinate the field-level activities of the United Nations operational activities.

38.25. Its role should include the following:

(a) Acting as the lead agency in organizing United Nations system efforts towards capacity-building at the local, national and regional levels;

(b) Mobilizing donor resources on behalf of Governments for capacity-building in recipient countries and, where appropriate, through the use of the UNDP donor round-table mechanisms;

(c) Strengthening its own programmes in support of follow-up to the Conference without prejudice to the fifth programming cycle;

(d) Assisting recipient countries, upon request, in the establishment and strengthening of national coordination mechanisms and networks related to activities for the follow-up to the Conference;

(e) Assisting recipient countries, upon request, in coordinating the mobilization of domestic financial resources;

(f) Promoting and strengthening the role and involvement of women, youth and other major groups in recipient countries in the implementation of Agenda 21.

3. United Nations Conference on Trade and Development

38.26. UNCTAD should play an important role in the implementation of Agenda 21 as extended at its eighth session, taking into account the importance of the interrelationships between development, international trade and the environment and in accordance with its mandate in the area of sustainable development.

4. United Nations Sudano-Sahelian Office

38.27. The role of the United Nations Sudano-Sahelian Office (UNSO), with added resources that may become available, operating under the umbrella of UNDP and with the support of UNEP, should be strengthened so that it can

assume an appropriate major advisory role and participate effectively in the implementation of Agenda 21 provisions related to combating drought and desertification and to land resource management. In this context, the experience gained could be used by all other countries affected by drought and desertification, in particular those in Africa, with special attention to countries most affected or classified as least developed countries.

5. Specialized agencies of the United Nations system and related organizations and other relevant intergovernmental organizations

38.28. All specialized agencies of the United Nations system, related organizations and other relevant intergovernmental organizations within their respective fields of competence have an important role to play in the implementation of relevant parts of Agenda 21 and other decisions of the Conference. Their governing bodies may consider ways of strengthening and adjusting activities and programmes in line with Agenda 21, in particular, regarding projects for promoting sustainable development. Furthermore, they may consider establishing special arrangements with donors and financial institutions for project implementation that may require additional resources.

I. Regional and subregional cooperation and implementation

38.29. Regional and subregional cooperation will be an important part of the outcome of the Conference. The regional commissions, regional development banks and regional economic and technical cooperation organizations, within their respective agreed mandates, can contribute to this process by:

(a) Promoting regional and subregional capacity-building;

(b) Promoting the integration of environmental concerns in regional and subregional development policies;

(c) Promoting regional and subregional cooperation, where appropriate, regarding transboundary issues related to sustainable development.

38.30. The regional commissions, as appropriate, should play a leading role in coordinating regional and subregional activities by sectoral and other United Nations bodies and shall assist countries in achieving sustainable development. The commissions and regional programmes within the United Nations system, as well as other regional organizations, should review the need for modification of ongoing activities, as appropriate, in light of Agenda 21.

38.31. There must be active cooperation and collaboration among the regional commissions and other relevant organizations, regional development banks, non-governmental organizations and other institutions at the regional level. UNEP and UNDP, together with the regional commissions, would have a crucial

role to play, especially in providing the necessary assistance, with particular emphasis on building and strengthening the national capacity of Member States.

38.32. There is a need for closer cooperation between UNEP and UNDP, together with other relevant institutions, in the implementation of projects to halt environmental degradation or its impact and to support training programmes in environmental planning and management for sustainable development at the regional level.

38.33. Regional intergovernmental technical and economic organizations have an important role to play in helping Governments to take coordinated action in solving environment issues of regional significance.

38.34. Regional and subregional organizations should play a major role in the implementation of the provisions of Agenda 21 related to combating drought and desertification. UNEP, UNDP and UNSO should assist and cooperate with those relevant organizations.

38.35. Cooperation between regional and subregional organizations and relevant organizations of the United Nations system should be encouraged, where appropriate, in other sectoral areas.

J. National implementation

38.36. States have an important role to play in the follow-up of the Conference and the implementation of Agenda 21. National level efforts should be undertaken by all countries in an integrated manner so that both environment and development concerns can be dealt with in a coherent manner.

38.37. Policy decisions and activities at the national level, tailored to support and implement Agenda 21, should be supported by the United Nations system upon request.

38.38. Furthermore, States could consider the preparation of national reports. In this context, the organs of the United Nations system should, upon request, assist countries, in particular developing countries. Countries could also consider the preparation of national action plans for the implementation of Agenda 21.

38.39. Existing assistance consortia, consultative groups and round tables should make greater efforts to integrate environmental considerations and related development objectives into their development assistance strategies and should consider reorienting and appropriately adjusting their memberships and operations to facilitate this process and better support national efforts to integrate environment and development.

38.40. States may wish to consider setting up a national coordination structure responsible for the follow-up of Agenda 21. Within this structure, which would benefit from the expertise of non-governmental organizations, submissions and other relevant information could be made to the United Nations.

K. Cooperation between United Nations bodies and international financial organizations

38.41. The success of the follow-up to the Conference is dependent upon an effective link between substantive action and financial support, and this requires close and effective cooperation between United Nations bodies and the multilateral financial organizations. The Secretary-General and heads of United Nations programmes, organizations and the multilateral financial organizations have a special responsibility in forging such cooperation, not only through the United Nations high-level coordination mechanism (Administrative Committee on Coordination) but also at regional and national levels. In particular, representatives of multilateral financial institutions and mechanisms, as well as IFAD, should actively be associated with deliberations of the intergovernmental structure responsible for the follow-up to Agenda 21.

L. Non-governmental organizations

38.42. Non-governmental organizations and major groups are important partners in the implementation of Agenda 21. Relevant non-governmental organizations, including the scientific community, the private sector and women's groups, should be given opportunities to make their contributions and establish appropriate relationships with the United Nations system. Support should be provided for developing countries' non-governmental organizations and their self-organized networks.

38.43. The United Nations system, including international finance and development agencies, and all intergovernmental organizations and forums should, in consultation with non-governmental organizations, take measures to:

(a) Design open and effective means to achieve the participation of non-governmental organizations, including those related to major groups, in the process established to review and evaluate the implementation of Agenda 21 at all levels and promote their contribution to it;

(b) Take into account the findings of review systems and evaluation processes of non-governmental organizations in relevant reports of the Secretary-General to the General Assembly and all pertinent United Nations agencies and intergovernmental organizations and forums concerning implementation of Agenda 21 in accordance with the review process.

38.44. Procedures should be established for an expanded role for non-governmental organizations, including those related to major groups, with accreditation based on the procedures used in the Conference. Such organizations should have access to reports and other information produced by the United Nations system. The General Assembly, at an early stage, should examine ways of enhancing the involvement of non-governmental organizations within the United Nations system in relation to the follow-up process of the Conference.

38.45. The Conference takes note of other institutional initiatives for the implementation of Agenda 21, such as the proposal to establish a non-governmental Earth Council and the proposal to appoint a guardian for future generations, as well as other initiatives taken by local governments and business sectors.

Chapter 39

INTERNATIONAL LEGAL INSTRUMENTS AND MECHANISMS

Basis for action

39.1. The recognition that the following vital aspects of the universal, multilateral and bilateral treaty-making process should be taken into account:

(a) The further development of international law on sustainable development, giving special attention to the delicate balance between environmental and developmental concerns;

(b) The need to clarify and strengthen the relationship between existing international instruments or agreements in the field of environment and relevant social and economic agreements or instruments, taking into account the special needs of developing countries;

(c) At the global level, the essential importance of the participation in and the contribution of all countries, including the developing countries, to treaty making in the field of international law on sustainable development. Many of the existing international legal instruments and agreements in the field of environment have been developed without adequate participation and contribution of developing countries, and thus may require review in order to reflect the concerns and interests of developing countries and to ensure a balanced governance of such instruments and agreements;

(d) Developing countries should also be provided with technical assistance in their attempts to enhance their national legislative capabilities in the field of environmental law;

(e) Future projects for the progressive development and codification of international law on sustainable development should take into account the ongoing work of the International Law Commission;

(f) Any negotiations for the progressive development and codification of international law concerning sustainable development should, in general, be conducted on a universal basis, taking into account special circumstances in the various regions.

Objectives

39.2. The overall objective of the review and development of international environmental law should be to evaluate and to promote the efficacy of that law and to promote the integration of environment and development policies through effective international agreements or instruments taking into account both universal principles and the particular and differentiated needs and concerns of all countries.

39.3. Specific objectives are:

(a) To identify and address difficulties which prevent some States, in particular developing countries, from participating in or duly implementing international agreements or instruments and, where appropriate, to review and revise them with the purposes of integrating environmental and developmental concerns and laying down a sound basis for the implementation of these agreements or instruments;

(b) To set priorities for future law-making on sustainable development at the global, regional or subregional level, with a view to enhancing the efficacy of international law in this field through, in particular, the integration of environmental and developmental concerns;

(c) To promote and support the effective participation of all countries concerned, in particular developing countries, in the negotiation, implementation, review and governance of international agreements or instruments, including appropriate provision of technical and financial assistance and other available mechanisms for this purpose, as well as the use of differential obligations where appropriate;

(d) To promote, through the gradual development of universally and multilaterally negotiated agreements or instruments, international standards for the protection of the environment that take into account the different situations and capabilities of countries. States recognize that environmental policies should deal with the root causes of environmental degradation, thus preventing environmental measures from resulting in unnecessary restrictions to trade. Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade. Unilateral actions to deal with environmental challenges outside the jurisdiction of the importing country should be avoided. Environmental measures addressing international environmental problems should, as far as possible, be based on an international consensus. Domestic measures targeted to achieve certain environmental objectives may need trade measures to render them effective. Should trade policy measures be found necessary for the enforcement of environmental policies, certain principles and rules should apply. These could include, inter alia, the principle of non-discrimination; the principle that the trade measure chosen should be the least trade-restrictive necessary to achieve the objectives; an obligation to ensure transparency in the use of trade measures related to the environment and to provide adequate notification of national regulations; and the need to give consideration to the special conditions and development requirements of developing countries as they move towards internationally agreed environmental objectives;

(e) To ensure the effective, full and prompt implementation of legally binding instruments and to facilitate timely review and adjustment of agreements or instruments by the parties concerned, taking into account the special needs and concerns of all countries, in particular developing countries;

(f) To improve the effectiveness of institutions, mechanisms and procedures for the administration of agreements and instruments;

(g) To identify and prevent actual or potential conflicts, particularly between environmental and social/economic agreements or instruments, with a view to ensuring that such agreements or instruments are consistent. Where conflicts arise they should be appropriately resolved;

(h) To study and consider the broadening and strengthening of the capacity of mechanisms, inter alia, in the United Nations system, to facilitate, where appropriate and agreed to by the parties concerned, the identification, avoidance and settlement of international disputes in the field of sustainable development, duly taking into account existing bilateral and multilateral agreements for the settlement of such disputes.

Activities

39.4. Activities and means of implementation should be considered in the light of the above basis for action and objectives, without prejudice to the right of every State to put forward suggestions in this regard in the General Assembly. These suggestions could be reproduced in a separate compilation on sustainable development.

A. Review, assessment and fields of action in international law for sustainable development

39.5. While ensuring the effective participation of all countries concerned, Parties should at periodic intervals review and assess both the past performance and effectiveness of existing international agreements or instruments as well as the priorities for future law making on sustainable development. This may include an examination of the feasibility of elaborating general rights and obligations of States, as appropriate, in the field of sustainable development, as provided by General Assembly resolution 44/228. In certain cases, attention should be given to the possibility of taking into account varying circumstances through differential obligations or gradual application. As an option for carrying out this task, earlier UNEP practice may be followed whereby legal experts designated by Governments could meet at suitable intervals, to be decided later, with a broader environmental and developmental perspective.

39.6. Measures in accordance with international law should be considered to address, in times of armed conflict, large-scale destruction of the environment that cannot be justified under international law. The General Assembly and its Sixth Committee are the appropriate forums to deal with this subject. The specific competence and role of the International Committee of the Red Cross should be taken into account.

39.7. In view of the vital necessity of ensuring safe and environmentally sound nuclear power, and in order to strengthen international cooperation in

this field, efforts should be made to conclude the ongoing negotiations for a nuclear safety convention in the framework of the International Atomic Energy Agency.

B. Implementation mechanisms

39.8. The parties to international agreements should consider procedures and mechanisms to promote and review their effective, full and prompt implementation. To that effect, States could, inter alia:

(a) Establish efficient and practical reporting systems on the effective, full and prompt implementation of international legal instruments;

(b) Consider appropriate ways in which relevant international bodies, such as UNEP, might contribute towards the further development of such mechanisms.

C. Effective participation in international law making

39.9. In all these activities and others that may be pursued in the future, based on the above basis for action and objectives, the effective participation of all countries, in particular developing countries, should be ensured through appropriate provision of technical assistance and/or financial assistance. Developing countries should be given "headstart" support not only in their national efforts to implement international agreements or instruments, but also to participate effectively in the negotiation of new or revised agreements or instruments and in the actual international operation of such agreements or instruments. Support should include assistance in building up expertise in international law particularly in relation to sustainable development, and in assuring access to the necessary reference information and scientific/technical expertise.

D. Disputes in the field of sustainable development

39.10. In the area of avoidance and settlement of disputes, States should further study and consider methods to broaden and make more effective the range of techniques available at present, taking into account, among others, relevant experience under existing international agreements, instruments or institutions and, where appropriate, their implementing mechanisms such as modalities for dispute avoidance and settlement. This may include mechanisms and procedures for the exchange of data and information, notification and consultation regarding situations that might lead to disputes with other States in the field of sustainable development and for effective peaceful means of dispute settlement in accordance with the Charter of the United Nations, including, where appropriate, recourse to the International Court of Justice, and their inclusion in treaties relating to sustainable development.

Chapter 40

INFORMATION FOR DECISION-MAKING

INTRODUCTION

40.1. In sustainable development, everyone is a user and provider of information considered in the broad sense. That includes data, information, appropriately packaged experience and knowledge. The need for information arises at all levels, from that of senior decision makers at the national and international levels to the grass-roots and individual levels. The following two programme areas need to be implemented to ensure that decisions are based increasingly on sound information:

(a) Bridging the data gap;

(b) Improving information availability.

PROGRAMME AREAS

A. Bridging the data gap

Basis for action

40.2. While considerable data already exist, as the various sectoral chapters of Agenda 21 indicate, more and different types of data need to be collected, at the local, provincial, national and international levels, indicating the status and trends of the planet's ecosystem, natural resource, pollution and socio-economic variables. The gap in the availability, quality, coherence, standardization and accessibility of data between the developed and the developing world has been increasing, seriously impairing the capacities of countries to make informed decisions concerning environment and development.

40.3. There is a general lack of capacity, particularly in developing countries, and in many areas at the international level, for the collection and assessment of data, for their transformation into useful information and for their dissemination. There is also need for improved coordination among environmental, demographic, social and developmental data and information activities.

40.4. Commonly used indicators such as the gross national product (GNP) and measurements of individual resource or pollution flows do not provide adequate indications of sustainability. Methods for assessing interactions between different sectoral environmental, demographic, social and developmental parameters are not sufficiently developed or applied. Indicators of sustainable development need to be developed to provide solid bases for decision-making at all levels and to contribute to a self-regulating sustainability of integrated environment and development systems.

Objectives

40.5. The following objectives are important:

(a) To achieve more cost-effective and relevant data collection and assessment by better identification of users, in both the public and private sectors, and of their information needs at the local, provincial, national and international levels;

(b) To strengthen local, provincial, national and international capacity to collect and use multisectoral information in decision-making processes and to enhance capacities to collect and analyse data and information for decision-making, particularly in developing countries;

(c) To develop or strengthen local, provincial, national and international means of ensuring that planning for sustainable development in all sectors is based on timely, reliable and usable information;

(d) To make relevant information accessible in the form and at the time required to facilitate its use.

Activities

(a) Development of indicators of sustainable development

40.6. Countries at the national level and international governmental and non-governmental organizations at the international level should develop the concept of indicators of sustainable development in order to identify such indicators. In order to promote the increasing use of some of those indicators in satellite accounts, and eventually in national accounts, the development of indicators needs to be pursued by the Statistical Office of the United Nations Secretariat, as it draws upon evolving experience in this regard.

(b) Promotion of global use of indicators of sustainable development

40.7. Relevant organs and organizations of the United Nations system, in cooperation with other international governmental, intergovernmental and non-governmental organizations, should use a suitable set of sustainable development indicators and indicators related to areas outside of national jurisdiction, such as the high seas, the upper atmosphere and outer space. The organs and organizations of the United Nations system, in coordination with other relevant international organizations, could provide recommendations for harmonized development of indicators at the national, regional and global levels, and for incorporation of a suitable set of these indicators in common, regularly updated, and widely accessible reports and databases, for use at the international level, subject to national sovereignty considerations.

(c) Improvement of data collection and use

40.8. Countries and, upon request, international organizations should carry out inventories of environmental, resource and developmental data, based on national/global priorities for the management of sustainable development. They should determine the gaps and organize activities to fill those gaps. Within the organs and organizations of the United Nations system and relevant international organizations, data-collection activities, including those of Earthwatch and World Weather Watch, need to be strengthened, especially in the areas of urban air, freshwater, land resources (including forests and rangelands), desertification, other habitats, soil degradation, biodiversity, the high seas and the upper atmosphere. Countries and international organizations should make use of new techniques of data collection, including satellite-based remote sensing. In addition to the strengthening of existing development-related data collection, special attention needs to be paid to such areas as demographic factors, urbanization, poverty, health and rights of access to resources, as well as special groups, including women, indigenous peoples, youth, children and the disabled, and their relationships with environment issues.

(d) Improvement of methods of data assessment and analysis

40.9. Relevant international organizations should develop practical recommendations for coordinated, harmonized collection and assessment of data at the national and international levels. National and international data and information centres should set up continuous and accurate data-collection systems and make use of geographic information systems, expert systems, models and a variety of other techniques for the assessment and analysis of data. These steps will be particularly relevant, as large quantities of data from satellite sources will need to be processed in the future. Developed countries and international organizations, as well as the private sector, should cooperate, in particular with developing countries, upon request, to facilitate their acquiring these technologies and this know-how.

(e) Establishment of a comprehensive information framework

40.10. Governments should consider undertaking the necessary institutional changes at the national level to achieve the integration of environmental and developmental information. At the international level, environmental assessment activities need to be strengthened and coordinated with efforts to assess development trends.

(f) Strengthening of the capacity for traditional information

40.11. Countries, with the cooperation of international organizations, should establish supporting mechanisms to provide local communities and resource users with the information and know-how they need to manage their environment and resources sustainably, applying traditional and indigenous knowledge and approaches when appropriate. This is particularly relevant for rural and urban populations and indigenous, women's and youth groups.

Means of implementation

(a) Financing and cost evaluation

40.12. The secretariat of the Conference has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $1.9 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Institutional means

40.13. Institutional capacity to integrate environment and development and to develop relevant indicators is lacking at both the national and international levels. Existing institutions and programmes such as the Global Environmental Monitoring System (GEMS) and the Global Resource Information Database (GRID) within UNEP and different entities within the systemwide Earthwatch will need to be considerably strengthened. Earthwatch has been an essential element for environment-related data. While programmes related to development data exist in a number of agencies, there is insufficient coordination between them. The activities related to development data of agencies and institutions of the United Nations system should be more effectively coordinated, perhaps through an equivalent and complementary "Development Watch", which with the existing Earthwatch should be coordinated through an appropriate office within the United Nations to ensure the full integration of environment and development concerns.

(c) Scientific and technological means

40.14. Regarding transfer of technology, with the rapid evolution of data-collection and information technologies it is necessary to develop guidelines and mechanisms for the rapid and continuous transfer of those technologies, particularly to developing countries, in conformity with chapter 34 (Transfer of environmentally sound technology, cooperation and capacity-building), and for the training of personnel in their utilization.

(d) Human resource development

40.15. International cooperation for training in all areas and at all levels will be required, particularly in developing countries. That training will have to include technical training of those involved in data collection, assessment and transformation, as well as assistance to decision makers concerning how to use such information.

(e) Capacity-building

40.16. All countries, particularly developing countries, with the support of international cooperation, should strengthen their capacity to collect, store, organize, assess and use data in decision-making more effectively.

B. Improving availability of information

Basis for action

40.17. There already exists a wealth of data and information that could be used for the management of sustainable development. Finding the appropriate information at the required time and at the relevant scale of aggregation is a difficult task.

40.18. Information within many countries is not adequately managed, because of shortages of financial resources and trained manpower, lack of awareness of the value and availability of such information and other immediate or pressing problems, especially in developing countries. Even where information is available, it may not be easily accessible, either because of the lack of technology for effective access or because of associated costs, especially for information held outside the country and available commercially.

Objectives

40.19. Existing national and international mechanisms of information processing and exchange, and of related technical assistance, should be strengthened to ensure effective and equitable availability of information generated at the local, provincial, national and international levels, subject to national sovereignty and relevant intellectual property rights.

40.20. National capacities should be strengthened, as should capacities within Governments, non-governmental organizations and the private sector, in information handling and communication, particularly within developing countries.

40.21. Full participation of, in particular, developing countries should be ensured in any international scheme under the organs and organizations of the United Nations system for the collection, analysis and use of data and information.

Activities

(a) Production of information usable for decision-making

40.22. Countries and international organizations should review and strengthen information systems and services in sectors related to sustainable development, at the local, provincial, national and international levels. Special emphasis should be placed on the transformation of existing information into forms more useful for decision-making and on targeting information at different user groups. Mechanisms should be strengthened or established for transforming scientific and socio-economic assessments into information suitable for both planning and public information. Electronic and non-electronic formats should be used.

(b) Establishment of standards and methods for handling information

40.23. Governments should consider supporting the efforts of governmental as well as non-governmental organizations to develop mechanisms for efficient and harmonized exchange of information at the local, national, provincial and international levels, including revision and establishment of data, access and dissemination formats, and communication interfaces.

(c) Development of documentation about information

40.24. The organs and organizations of the United Nations system, as well as other governmental and non-governmental organizations, should document and share information about the sources of available information in their respective organizations. Existing programmes, such as those of the Advisory Committee for the Coordination of Information Systems (ACCIS) and the International Environmental Information System (INFOTERRA), should be reviewed and strengthened as required. Networking and coordinating mechanisms should be encouraged between the wide variety of other actors, including arrangements with non-governmental organizations for information sharing and donor activities for sharing information on sustainable development projects. The private sector should be encouraged to strengthen the mechanisms of sharing its experience and information on sustainable development.

(d) Establishment and strengthening of electronic networking capabilities

40.25. Countries, international organizations, including organs and organizations of the United Nations system, and non-governmental organizations should exploit various initiatives for electronic links to support information sharing, to provide access to databases and other information sources, to facilitate communication for meeting broader objectives, such as the implementation of Agenda 21, to facilitate intergovernmental negotiations, to monitor conventions and efforts for sustainable development to transmit environmental alerts, and to transfer technical data. These organizations should also facilitate the linkage of different electronic networks and the use of appropriate standards and communication protocols for the transparent interchange of electronic communications. Where necessary, new technology should be developed and its use encouraged to permit participation of those not served at present by existing infrastructure and methods. Mechanisms should also be established to carry out the necessary transfer of information to and from non-electronic systems to ensure the involvement of those not able to participate in this way.

(e) Making use of commercial information sources

40.26. Countries and international organizations should consider undertaking surveys of information available in the private sector on sustainable development and of present dissemination arrangements to determine gaps and how those gaps could be filled by commercial or quasi-commercial activity, particularly activities in and/or involving developing countries where feasible. Whenever economic or other constraints on supplying and accessing

information arise, particularly in developing countries, innovative schemes for subsidizing such information-related access or removing the non-economic constraints should be considered.

Means of implementation

(a) Financing and cost evaluation

40.27. The secretariat of the Conference has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $165 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Institutional means

40.28. The institutional implications of this programme concern mostly the strengthening of already existing institutions, as well as the strengthening of cooperation with non-governmental organizations, and need to be consistent with the overall decisions on institutions made by the United Nations Conference on Environment and Development.

(c) Capacity-building

40.29. Developed countries and relevant international organizations should cooperate, in particular with developing countries, to expand their capacity to receive, store and retrieve, contribute, disseminate, use and provide appropriate public access to relevant environmental and developmental information, by providing technology and training to establish local information services and by supporting partnership and cooperative arrangements between countries and on the regional or subregional level.

(d) Scientific and technological means

40.30. Developed countries and relevant international organizations should support research and development in hardware, software and other aspects of information technology, in particular in developing countries, appropriate to their operations, national needs and environmental contexts.

Annex III

NON-LEGALLY BINDING AUTHORITATIVE STATEMENT OF PRINCIPLES FOR A GLOBAL CONSENSUS ON THE MANAGEMENT, CONSERVATION AND SUSTAINABLE DEVELOPMENT OF ALL TYPES OF FORESTS

PREAMBLE

(a) The subject of forests is related to the entire range of environmental and development issues and opportunities, including the right to socio-economic development on a sustainable basis.

(b) The guiding objective of these principles is to contribute to the management, conservation and sustainable development of forests and to provide for their multiple and complementary functions and uses.

(c) Forestry issues and opportunities should be examined in a holistic and balanced manner within the overall context of environment and development, taking into consideration the multiple functions and uses of forests, including traditional uses, and the likely economic and social stress when these uses are constrained or restricted, as well as the potential for development that sustainable forest management can offer.

(d) These principles reflect a first global consensus on forests. In committing themselves to the prompt implementation of these principles, countries also decide to keep them under assessment for their adequacy with regard to further international cooperation on forest issues.

(e) These principles should apply to all types of forests, both natural and planted, in all geographical regions and climatic zones, including austral, boreal, subtemperate, temperate, subtropical and tropical.

(f) All types of forests embody complex and unique ecological processes which are the basis for their present and potential capacity to provide resources to satisfy human needs as well as environmental values, and as such their sound management and conservation is of concern to the Governments of the countries to which they belong and are of value to local communities and to the environment as a whole.

(g) Forests are essential to economic development and the maintenance of all forms of life.

(h) Recognizing that the responsibility for forest management, conservation and sustainable development is in many States allocated among federal/national, state/provincial and local levels of government, each State, in accordance with its constitution and/or national legislation, should pursue these principles at the appropriate level of government.

PRINCIPLES/ELEMENTS

1. (a) States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies and have the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

(b) The agreed full incremental cost of achieving benefits associated with forest conservation and sustainable development requires increased international cooperation and should be equitably shared by the international community.

2. (a) States have the sovereign and inalienable right to utilize, manage and develop their forests in accordance with their development needs and level of socio-economic development and on the basis of national policies consistent with sustainable development and legislation, including the conversion of such areas for other uses within the overall socio-economic development plan and based on rational land-use policies.

(b) Forest resources and forest lands should be sustainably managed to meet the social, economic, ecological, cultural and spiritual needs of present and future generations. These needs are for forest products and services, such as wood and wood products, water, food, fodder, medicine, fuel, shelter, employment, recreation, habitats for wildlife, landscape diversity, carbon sinks and reservoirs, and for other forest products. Appropriate measures should be taken to protect forests against harmful effects of pollution, including air-borne pollution, fires, pests and diseases, in order to maintain their full multiple value.

(c) The provision of timely, reliable and accurate information on forests and forest ecosystems is essential for public understanding and informed decision-making and should be ensured.

(d) Governments should promote and provide opportunities for the participation of interested parties, including local communities and indigenous people, industries, labour, non-governmental organizations and individuals, forest dwellers and women, in the development, implementation and planning of national forest policies.

3. (a) National policies and strategies should provide a framework for increased efforts, including the development and strengthening of institutions and programmes for the management, conservation and sustainable development of forests and forest lands.

(b) International institutional arrangements, building on those organizations and mechanisms already in existence, as appropriate, should facilitate international cooperation in the field of forests.

(c) All aspects of environmental protection and social and economic development as they relate to forests and forest lands should be integrated and comprehensive.

4. The vital role of all types of forests in maintaining the ecological processes and balance at the local, national, regional and global levels through, inter alia, their role in protecting fragile ecosystems, watersheds and freshwater resources and as rich storehouses of biodiversity and biological resources and sources of genetic material for biotechnology products, as well as photosynthesis, should be recognized.

5. (a) National forest policies should recognize and duly support the identity, culture and the rights of indigenous people, their communities and other communities and forest dwellers. Appropriate conditions should be promoted for these groups to enable them to have an economic stake in forest use, perform economic activities, and achieve and maintain cultural identity and social organization, as well as adequate levels of livelihood and well-being, through, inter alia, those land tenure arrangements which serve as incentives for the sustainable management of forests.

(b) The full participation of women in all aspects of the management, conservation and sustainable development of forests should be actively promoted.

6. (a) All types of forests play an important role in meeting energy requirements through the provision of a renewable source of bio-energy, particularly in developing countries, and the demands for fuelwood for household and industrial needs should be met through sustainable forest management, afforestation and reforestation. To this end, the potential contribution of plantations of both indigenous and introduced species for the provision of both fuel and industrial wood should be recognized.

(b) National policies and programmes should take into account the relationship, where it exists, between the conservation, management and sustainable development of forests and all aspects related to the production, consumption, recycling and/or final disposal of forest products.

(c) Decisions taken on the management, conservation and sustainable development of forest resources should benefit, to the extent practicable, from a comprehensive assessment of economic and non-economic values of forest goods and services and of the environmental costs and benefits. The development and improvement of methodologies for such evaluations should be promoted.

(d) The role of planted forests and permanent agricultural crops as sustainable and environmentally sound sources of renewable energy and industrial raw material should be recognized, enhanced and promoted. Their contribution to the maintenance of ecological processes, to offsetting pressure on primary/old-growth forest and to providing regional employment and development with the adequate involvement of local inhabitants should be recognized and enhanced.

(e) Natural forests also constitute a source of goods and services, and their conservation, sustainable management and use should be promoted.

7. (a) Efforts should be made to promote a supportive international economic climate conducive to sustained and environmentally sound development of forests in all countries, which include, inter alia, the promotion of sustainable patterns of production and consumption, the eradication of poverty and the promotion of food security.

(b) Specific financial resources should be provided to developing countries with significant forest areas which establish programmes for the conservation of forests including protected natural forest areas. These resources should be directed notably to economic sectors which would stimulate economic and social substitution activities.

8. (a) Efforts should be undertaken towards the greening of the world. All countries, notably developed countries, should take positive and transparent action towards reforestation, afforestation and forest conservation, as appropriate.

(b) Efforts to maintain and increase forest cover and forest productivity should be undertaken in ecologically, economically and socially sound ways through the rehabilitation, reforestation and re-establishment of trees and forests on unproductive, degraded and deforested lands, as well as through the management of existing forest resources.

(c) The implementation of national policies and programmes aimed at forest management, conservation and sustainable development, particularly in developing countries, should be supported by international financial and technical cooperation, including through the private sector, where appropriate.

(d) Sustainable forest management and use should be carried out in accordance with national development policies and priorities and on the basis of environmentally sound national guidelines. In the formulation of such guidelines, account should be taken, as appropriate and if applicable, of relevant internationally agreed methodologies and criteria.

(e) Forest management should be integrated with management of adjacent areas so as to maintain ecological balance and sustainable productivity.

(f) National policies and/or legislation aimed at management, conservation and sustainable development of forests should include the protection of ecologically viable representative or unique examples of forests, including primary/old-growth forests, cultural, spiritual, historical, religious and other unique and valued forests of national importance.

(g) Access to biological resources, including genetic material, shall be with due regard to the sovereign rights of the countries where the forests are located and to the sharing on mutually agreed terms of technology and profits from biotechnology products that are derived from these resources.

(h) National policies should ensure that environmental impact assessments should be carried out where actions are likely to have significant adverse impacts on important forest resources, and where such actions are subject to a decision of a competent national authority.

9. (a) The efforts of developing countries to strengthen the management, conservation and sustainable development of their forest resources should be supported by the international community, taking into account the importance of redressing external indebtedness, particularly where aggravated by the net transfer of resources to developed countries, as well as the problem of achieving at least the replacement value of forests through improved market access for forest products, especially processed products. In this respect, special attention should also be given to the countries undergoing the process of transition to market economies.

(b) The problems that hinder efforts to attain the conservation and sustainable use of forest resources and that stem from the lack of alternative options available to local communities, in particular the urban poor and poor rural populations who are economically and socially dependent on forests and forest resources, should be addressed by Governments and the international community.

(c) National policy formulation with respect to all types of forests should take account of the pressures and demands imposed on forest ecosystems and resources from influencing factors outside the forest sector, and intersectoral means of dealing with these pressures and demands should be sought.

10. New and additional financial resources should be provided to developing countries to enable them to sustainably manage, conserve and develop their forest resources, including through afforestation, reforestation and combating deforestation and forest and land degradation.

11. In order to enable, in particular, developing countries to enhance their endogenous capacity and to better manage, conserve and develop their forest resources, the access to and transfer of environmentally sound technologies and corresponding know-how on favourable terms, including on concessional and preferential terms, as mutually agreed, in accordance with the relevant provisions of Agenda 21, should be promoted, facilitated and financed, as appropriate.

12. (a) Scientific research, forest inventories and assessments carried out by national institutions which take into account, where relevant, biological, physical, social and economic variables, as well as technological development and its application in the field of sustainable forest management, conservation and development, should be strengthened through effective modalities, including international cooperation. In this context, attention should also be given to research and development of sustainably harvested non-wood products.

(b) National and, where appropriate, regional and international institutional capabilities in education, training, science, technology, economics, anthropology and social aspects of forests and forest management are essential to the conservation and sustainable development of forests and should be strengthened.

(c) International exchange of information on the results of forest and forest management research and development should be enhanced and broadened, as appropriate, making full use of education and training institutions, including those in the private sector.

(d) Appropriate indigenous capacity and local knowledge regarding the conservation and sustainable development of forests should, through institutional and financial support and in collaboration with the people in the local communities concerned, be recognized, respected, recorded, developed and, as appropriate, introduced in the implementation of programmes. Benefits arising from the utilization of indigenous knowledge should therefore be equitably shared with such people.

13. (a) Trade in forest products should be based on non-discriminatory and multilaterally agreed rules and procedures consistent with international trade law and practices. In this context, open and free international trade in forest products should be facilitated.

(b) Reduction or removal of tariff barriers and impediments to the provision of better market access and better prices for higher value-added forest products and their local processing should be encouraged to enable producer countries to better conserve and manage their renewable forest resources.

(c) Incorporation of environmental costs and benefits into market forces and mechanisms, in order to achieve forest conservation and sustainable development, should be encouraged both domestically and internationally.

(d) Forest conservation and sustainable development policies should be integrated with economic, trade and other relevant policies.

(e) Fiscal, trade, industrial, transportation and other policies and practices that may lead to forest degradation should be avoided. Adequate policies, aimed at management, conservation and sustainable development of forests, including, where appropriate, incentives, should be encouraged.

14. Unilateral measures, incompatible with international obligations or agreements, to restrict and/or ban international trade in timber or other forest products should be removed or avoided, in order to attain long-term sustainable forest management.

15. Pollutants, particularly air-borne pollutants, including those responsible for acidic deposition, that are harmful to the health of forest ecosystems at the local, national, regional and global levels should be controlled.

RESOLUTION 2

Expression of thanks to the people and Government of Brazil

The United Nations Conference on Environment and Development,

Having met in Rio de Janeiro at the invitation of the Government of Brazil from 3 to 14 June 1992,

1. Expresses its deep appreciation to His Excellency the President of Brazil, Mr. Fernando Collor, for his outstanding contribution as President of the United Nations Conference on Environment and Development to the successful outcome of the Conference;

2. Expresses its profound gratitude to the Government of Brazil for having made it possible for the Conference to be held in Rio de Janeiro and for the excellent facilities, staff and services so graciously placed at its disposal;

3. Requests the Government of Brazil to convey to the State and City of Rio de Janeiro and to the people of Brazil the gratitude of the Conference for the hospitality and warm welcome extended to the participants;

4. Acknowledges with appreciation the continuing commitment of the Government of Brazil to the objectives of the Conference and its decision to establish in Rio de Janeiro an International Centre for Sustainable Development.

RESOLUTION 3

Credentials of representatives to the Conference

The United Nations Conference on Environment and Development

Approves the report of the Credentials Committee. 1/

1/ A/CONF.151/17.